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The Mind and The Body

By A. L. Kip

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The Mind
and
The Body

By

A. L. Kip

The Knickerbocker Press
New York
1905

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THE MIND AND THE BODY

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THE MIND AND THE BODY

THE BRAIN

THE entire human body is separable into two distinct divisions, consisting of the brain as the interior, and the remainder of the body as the exterior, division. The brain is the organ of the mind, and contains every mental faculty of man; while the various parts of the body are simply external manifestations and expressions of these faculties of the brain, adapted to execute the purposes of the mind in the outward world, to communicate with persons and things outside of itself, to be sustained by material substances just as the mind is nourished by immaterial food, and to play a part in the realm of nature similar to that which the brain plays in the realm of mind. The intimate connection between the brain and the body is evidenced by the nerves proceeding from the brain, which "form the members, viscera, and organs of the body," [1] which enable the

[1] Swedenborg, *Heavenly Arcana*, 4325.

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brain to direct the bodily movements, and which convey to the brain sensations from without.

While Swedenborg does not definitely state that all the parts of the body answer to the faculties contained in the brain, his remarks certainly imply such a relationship:

"The head signifies wisdom, intelligence, and knowledge of truths, and in the contrary sense folly, insanity, and knowledge of falsities, because these have their seat in the head, and are there in their beginnings. This is clearly evident from the fact that the origins of all fibres are in the head, and from it they go forth to all the organs of sense and motion belonging to the face and the whole body; and there, too, are substances in infinite number that look like little spheres and are called by anatomists the cortical and cineritious substances; and from these go forth small fibres, the first of which are indiscernible; afterwards these are bundled together, and make up the medullary substance of the whole cerebrum, cerebellum, and medulla oblongata. From this medullary substance discernible fibres extend, and these when conjoined are called nerves. By these the cerebrum, the cerebellum, and the spinal medulla form the entire body and each and all things pertaining to it; and from this it comes that the whole and every part of the body is ruled by the brains. Hence it can be seen that the brains are the seat of the understanding and the will, which are included in the one term 'mind,' and consequently of intelligence and wisdom, and that these are there in their first prin-

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ciples; also that the organs which are formed to receive sensations and to produce motions are derivations therefrom, precisely like streams from their fountains, or derivatives from their principles, or composite things from their substances; and these derivations are such that the brains are everywhere present, almost as the sun is present by its light and heat in each and all things of the earth. From this it follows that the whole body, and each and every part of it, are forms that are under the observation, guidance, and control of the mind, which is in the brain; thus these forms are so constructed in dependence upon it that any part in which the mind is not present, or to which it does not communicate its life, is no part of man's life. Hence it can be seen that when the mind is in its thought, which pertains to the understanding, and in its affection, which pertains to the will, it has extension into every particular of the whole body, and there by means of its forms it spreads itself out as the thoughts and affections of the angels do into the societies of the whole heaven. The case is similar, because all things of the human body correspond to all things of heaven: wherefore the form of the whole heaven before the Lord is the human form." [1]

The results of physiological investigations at the present day are also in favor of a close relation between localized mental faculties in the brain and the organs and members of the body; for it is an established scientific fact that certain known areas of the brain preside over definite

[1] *Apocalypse Explained*, 775.

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functions of the body, and physiologists have apportioned special tracts in the brain which govern through the nerves the organs of sight, smell, taste, hearing, and touch, as well as those which actuate the various muscles of the body. The present view regarding the localization and nature of the cerebral faculties is thus described in a general way:

"Although there is still some difference of opinion among investigators as to the absolute limits of certain localizable areas, it is settled beyond dispute that there are fixed areas presiding over motion, language, and sight, and a strong presumption in favor of the localization of the various forms of common sensation, of most of the special senses, and of the higher intellectual faculties." [1]

"Speaking in the most general way, and for the present omitting the accumulating evidence in favor of the direct representation of the various co-ordinated movements of the muscles of the body in ganglia situated in different parts of the cerebral cortex, it may be said that, the cerebral hemispheres are the organs by which are perceived those clear and more impressive sensations which can be retained, and regarding which we can judge; the cerebrum is the organ of the will, in so far at least as each act of the will requires a deliberate, however quick, determination; it is the means of retaining impressions of sensible things, and reproducing them in subjective

[1] H. C. Gordinier, *Anatomy of the Central Nervous System*, p. 449.

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sensations and ideas; it is the medium of all the higher emotions and feelings, and of the faculties of judgment, understanding, memory, reflection, induction, imagination, and the like." [1]

If physiologists succeed in conclusively fixing the exact convolutions of the brain from which separate nerves ramify into distinct areas of the body, such localization will probably demonstrate the respective positions in the brain of the faculties answering to the bodily counterparts. No attempt will be made in these pages to determine by correspondential study the cerebral locality of the several mental faculties, as it would be a very difficult task, and is unnecessary for our present purpose; but some general idea of the distribution of the faculties in the brain can be derived from the geographical arrangement of the countries of the globe, for these correspond to the brain,[2] although several of the faculties which appear in the body are apparently not represented upon our earth. Phrenologists have endeavored to fix the exact location of the mental faculties by means of the influence of their development upon the conformation of the cranium: yet they have met with but partial success; for while it seems likely that many of the phrenological faculties are correctly placed, the nature of some of them is not clearly understood,

[1] *Kirke's Handbook of Physiology*, pp. 633, 634.
[2] See *Psychology of the Nations.*

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other faculties are incompletely defined or left out altogether, and because only a part of the convolutions of the brain wherein the faculties reside lies directly under the visible surface of the skull, phrenologists have overlooked the faculties of the cerebellum, as well as those of other portions of the brain, which either are at the base of the skull and out of reach, or else are in the interior of the brain and do not touch the surface of the skull.

The cerebrum and the cerebellum constitute the parts of the brain which contain the mental faculties. The subordinate cerebral organs and tissues serve in general to connect the different regions of the cerebrum and cerebellum, to assist them to perform their higher operations, and to aid in the direction and animation of the activities of the body.

A very brief description will be given of the functions of several of these cerebral appendages, the same being based partly on physiological data and partly on correspondences. The largest of them are the basal ganglionic masses known as the optic thalami and the corpora striata. The function of the optic thalami, through which pass the nerves of sense, is to store up sense impressions, especially those of sight, and, after they have become familiar, to recognize them readily when repeated; thus they recognize the letters and familiar words in reading, so that the cere-

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brum may be free to attend to the meaning. The function of the corpora striata, through which pass the nerves of motion, is to learn, and then to direct, familiar motions of the body without the constant attention of the cerebrum; they write the separate letters, strike the keys of the piano, and guide the brush in sketching, so that the brain is able to give heed to the sense of the writing, the feeling of the music, and the beauty of the painting. The intra-ventricular portion, or caudate nucleus, of the corpora striata seems to be concerned with more painstaking renditions, such as are characteristic of an artist or a fine musician; while the extra-ventricular portion, or lenticular nucleus, which is lodged in the white substance of the hemispheres, seems to operate in a more careless and perfunctory way. The function of the corpora quadragemina is to direct the movements in walking and other locomotion, and this they do even when the mind pays no attention to the way; the anterior pair look ahead, and the posterior pair watch the ground immediately around the feet. The pineal body, which lies in front of the corpora quadragemina, has the function of mind reading. It is larger in the child and the adult female than in the adult male, because women and children are less initiative than men, and are therefore more accustomed to try to perceive the attitude of mind in others. In birds this body is associated with

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their homing instinct, and with them the faculty no doubt becomes the instinctive sensing of the location of an unseen place, which is only a more physical aspect of mind reading, which is the instinctive sensing of some unknown thing in another's mind. The functions of the corpora albicantia or mammillaria and the pituitary body, which are situated near one another, consist in animating the body. The pituitary body animates it intellectually and outwardly, and the corpora albicantia animate it emotionally and inwardly. It is by means of these organs that orators and actors throw animation and passion into their gestures and tones. The fornix is a longitudinal commissure situated in the middle of the cerebrum, and has two posterior and two anterior pillars, the latter terminating in the corpora albicantia. The fornix is the seat of deep feeling, and causes the mental faculties to vibrate in unison with its emotion. Its deep, and even tragic, feeling is expressed by means of the corpora albicantia. The tuber cinereum is a thin sheet of gray matter lying in front of the corpora albicantia, and from its forward part the infundibulum, or the stalk of the pituitary body, projects downward and connects that body with the base of the brain. The tuber cinereum, which has a close relationship to the fornix and the corpora albicantia, is the seat of animated feeling. The infundibulum seems to correspond to the faculty

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of seizing on every fact and situation that affords scope for stress or feeling, the ventricular fluid conveyed through the infundibulum representing the literal facts or ideas, which are converted by the pituitary body into more or less animated and impassioned utterances. Such conversion of literal facts into animated thoughts seems to be accomplished in the small posterior lobe of the pituitary body, which belongs to the brain; whereas the larger anterior lobe, which is developed from the embryonic oral cavity, seems to have charge of the impassioned utterance. The tuber cinereum and the infundibulum are actively employed in extemporaneous speaking.

The cerebrum is much the larger mass of the brain, and occupies all the upper part of the head, front and back; and the cerebellum, or little brain, lies under the cerebrum at the back of the head. The convolutions of the cerebrum contain the intellectual faculties, and the cerebellum contains the emotional faculties of the mind.[1] Hence the cerebrum is the general animatory organ of the brain, the general conscious sensorium, and the centre for voluntary motion in the body; whereas the cerebellum is the general involuntary organ of the brain, and furnishes the subconscious elements which are characteristic of the feelings.[2] Therefore, when

[1] *Apocalypse Explained*, 61, 316.

[2] *The Brain*, i., 104, ii., 683; *Heavenly Arcana*, 4325, 9683.

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the cerebrum is removed in animals, they lose intelligence, volition, and conscious sensation, for these faculties reside in the cerebrum; whereas, when the cerebellum is removed, they execute their movements very clumsily, and are unable to co-ordinate them, for all unconscious ease and harmonious union of motions flow from the feelings, which have their seat in the cerebellum. Moreover, the cerebellum takes cognizance through appropriate nerves of everything that occurs in the body, and disposes itself in agreement therewith [1]; and the knowledge so acquired of the actual condition of the muscles with regard to tension and contraction assists the cerebellum in uniting the muscular actions into harmonious combinations.

The fluid contained in the ventricles of the brain seems to correspond to the literal facts upon which the mental operations are based, just as the brain in general is built around the central canal formed by the ventricles; and this cerebral fluid is represented by the oceans and seas of our planet. Thus the fluid within the main portion of the third ventricle corresponds to the knowledge of particular facts, which is represented on our earth by the Mediterranean Sea; and the fluid within the forward and downward projection of the third ventricle, known as the optic recess, corresponds to the knowledge of general facts

[1] *The Brain*, ii., 680, 681a; *Animal Kingdom*, i., 43.

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drawn therefrom, which is represented by the Black Sea. The function of the septum lucidum, which encloses the separate fifth ventricle, seems to consist in the formation of mental images or ideas of outward objects; the fluid within it representing the knowledge of the literal images reported to the brain by the visual sense, which the septum holds clearly before it and formulates into mental ideas or representations. The fifth ventricle therefore represents the Caspian Sea of our earth, which, like this ventricle, does not connect with other seas.

The whole brain is distinguished into two hemispheres. In the cerebrum these hemispheres are separate, and the left is intellectual, and the right emotional; but in the cerebellum the hemispheres are united by the vermiform process, and the left is emotional, and the right intellectual. It is perhaps in consequence of this difference that the fibres composing the superior cerebellar peduncles, which connect the cerebrum with the cerebellum, pass from one cerebral hemisphere to the opposite cerebellar hemisphere. This reverse arrangement of the hemispheres of cerebrum and cerebellum explains Swedenborg's apparently contradictory statements, that the left of the brain corresponds to emotional things and the right to intellectual things,[1] and that the left of the brain corresponds to intellectual things and the

[1] *Spiritual Diary*, 1023, 1027, 1666, 1667.

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right to emotional things [1]; for the former statement is true of the cerebellum, and the latter is true of the cerebrum.

It is not certain whether every faculty of the mind occurs on both sides of the brain; but, judging from the observations of physiologists, who have located each sensory tract on both sides of the head, and also from those of phrenologists, who give each faculty a double representation, it is probable that nearly every faculty, at least of the divided cerebrum, has an intellectual and an emotional side, which appear in the respective hemispheres of the brain.

The great distinction between the brain and the rest of the body indicates that the brain of the Greatest Man of heaven is composed of the celestial angels, and that the body of the Greatest Man is made up of the spiritual and natural angels,—its internals of the spiritual, and its externals of the natural, angels. Moreover, as every earth in the universe corresponds to some faculty of the brain and some part of the human body,[2] they who are celestially regenerated in any planet will, as a rule, go after death to the faculty in the brain of the Greatest Man to which their earth interiorly corresponds, while they who are spiritually and naturally regenerated will after death become members of the organs and viscera of the body of the Greatest Man to which their

[1] *Heavenly Arcana*, 4052. [2] *Idem*, 7358.

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earths exteriorly correspond. Such a distribution of the angels in heaven assigns to them a definite position in the Greatest Man for which their previous earthly career specially fits them; and besides we are told that the celestial angels occupy the head, and the spiritual and natural angels the body, of the Greatest Man.[1]

The brain may be divided into three great sections, consisting of cerebellum, hinder cerebrum, and frontal cerebrum, which correspond in a general way to perceptive feeling, concrete mentality, and abstract mentality. The angels of the cerebellum in the Greatest Man are the celestial angels who are pre-eminently in love to the Lord, love to the neighbor, mercy, amiability, humor, good-nature, and the various other emotional and intellectual feelings. The angels of the hinder cerebrum are the celestial angels who have most strongly developed judgment, observation, comparison, will,[2] inspiration, domination, and the concrete intellectual faculties and thoughtful emotions generally. The angels of the frontal cerebrum are the celestial angels who preponderatingly possess the memory of the subjective and objective things of heaven, the rational faculties, good-will, intuition, the outward

[1] *Heavenly Arcana*, 4938, 5328, 10,005; *Heaven and Hell*, 29; *True Christian Religion*, 119, 608.

[2] The faculties of will and determination seem, however, to be common to both the anterior and the posterior cerebrum.

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perceptions, and in general abstract feeling, thought, and knowledge.

Like the government of the body by the brain, the celestial angels of the cerebellum and the cerebrum control, direct, and animate the activities of all the lower angels; and their important functions are admirably described by Worcester in his *Physiological Correspondences*.[1]

The middle brain, which lies between the cerebellum and the cerebrum and unites them, no doubt helps these organs to operate in unison, and also conveys to and fro their different impulses and instructions. It seems to correspond to the love of combining into a comprehensive whole both the emotional and the intellectual aspects of a question. Swedenborg states that the planet Mars corresponds to this middle province of the brain, and thus describes the quality of Martian spirits, who, like the middle brain, are in thought from affection, and in the affection of thought.

"I have been instructed that the spirits of Mars refer to something interior in man, and indeed to the middle region between what is intellectual and what is emotional, thus to thought from affection, and the best of them to the affection of thought. And because they have such a relation in the Greatest Man, that province which is between the cerebrum and the cerebellum corresponds to them; for in them cerebrum and cerebellum are conjoined as to spiritual opera-

[1] Pp. 424–432.

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tions. Their face makes one with their thought, so that from the face the very affection of thought shines forth, and from the affection, with some indications also from the eyes, the general nature of the thought. Wherefore, when they were near me, I sensibly perceived a drawing back of the front part of the head toward the occiput, and thus of the cerebrum toward the cerebellum." [1]

Almost every part of the cortex of one hemisphere of the cerebrum is connected with the answering part of the other hemisphere by nerve fibres, which, when compressed into a solid mass between the cerebral hemispheres, constitute what is known as the corpus callosum. The corpus callosum corresponds to the love of combining and expressing ideas of thought in terms that will include both the emotional and the intellectual way of looking at them.

The brain is encompassed by three membranes, —the pia mater, the arachnoid, and the dura mater. These membranes correspond to the love of making general statements that will include as a whole the results of the mental operations. The pia mater, which is a delicate network of tissue in immediate relation to the surface of the brain, whose convolutions it closely follows, corresponds to general statements made in an emotional way; the arachnoid, which lies between

[1] *Heavenly Arcana*, 7480, 7481.

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the pia mater and the dura mater, and which facilitates the pulsations of the brain by a fluid it secretes, corresponds to general statements made in a thoughtful way; and the dense, fibrous dura mater, which is the most outward of the three membranes, and which affords a tough protective covering to the brain, corresponds to statements made in a knowing or matter-of-fact way. As a general rule, wherever things occur in the body in a series of three, the inmost corresponds to feeling, the middle to thought, and the outmost to knowledge; or, with reference to discrete degrees, the series is respectively celestial, spiritual, and natural.

Swedenborg mentions spirits of the other world who belong to the province of the pia mater, and says of them that they do not rely much on their own thought, but are open and receptive to the ideas of others; and that they are therefore able to act as intermediates between different classes of angels, and to establish communication between them. He also says that the spirits who constitute the province of the dura mater were such in the life of the body that they could not penetrate in their thought any farther than natural things, and the most interior of them had thought about spiritual and celestial things only from the objects of the senses.[1] While these descriptions evidently apply to some lower heaven, and not

[1] *Heavenly Arcana*, 4046, 4047.

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to the Greatest Man as a whole, the statements agree in a general way with the correspondence of these membranes given above.

The societies who constitute the pia mater in the Greatest Man are they who are open and receptive to the emotional ideas of the angels of the inmost heaven, and who love to gather their feelings and perceptions on any subject, delicately adapting themselves to their deep and intricate turns of mind, just as the pia mater follows closely the furrows and fissures of the brain, which they then frame into general emotional statements. The heavenly societies who constitute the arachnoid membrane are they who love to gather the different thoughts of the celestial angels, and to formulate them into thoughtful statements, but who do not attend so much to the feelings, just as the arachnoid does not enter into the cerebral infoldings. The societies who constitute the dura mater are they who collect information from the celestial angels, and then weave the knowledge obtained from them into a compact and coherent statement. Hence these membranous societies, and especially the societies of the dura mater, serve to invest and to protect the celestial angels; for these societies are authoritative exponents of the feeling, thought, and knowledge of the entire celestial heaven.

The sinuses of the brain are channels between

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layers of the dura mater, which receive the blood from veins coming from various parts of the brain, and empty it into the internal jugular vein. They seem to correspond to the rather dreamy condition of mind which succeeds mental exertion, but which is not a state of complete rest. It is Swedenborg's theory that the function of these sinuses is chiefly to draw off from the brain the gross and sluggish blood, and to refresh and vivify such effete blood by mingling with it the spiritous fluid conveyed to appropriate sinuses from the pituitary body [1]; and it is true that the mind is refreshed by such states of dreamy, but wakeful, tranquillity. Swedenborg speaks of a certain spirit who was in a state of tranquillity, like a kind of peaceful sleep, and who yet asked questions with as much prudence as a person fully awake; and he states that he was told that such spirits have reference to the sinuses of the brain, and are in a state of peace, no matter how the surrounding societies may be actively agitated.[2]

The membranes or meninges of the brain may be represented in the Greatest Man of the universe by the planet Neptune; for as the great conjoining cerebral medium constituted by the middle brain is represented by the planet Mars, it is possible that the most outward covering and communicating medium of the entire brain is

[1] *The Brain*, i., 330–335, 593. [2] *Heavenly Arcana*, 4048.

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represented by the most outward planet of our system, which is the planet Neptune.

The angelic societies composing the subordinate cerebral organs perform uses in the Greatest Man similar to those which these appendages perform in the individual.

The societies of the ventricles of heaven are the angels who delight in the acquisition of literal abstract and concrete truths, particular and general facts, and subjective ideas of outward objects, and who impart their literal learning to the cerebral angels to serve as a basis for their thoughtful reflections and formulated knowledge. Swedenborg says that spirits who had reference to the ventricles and infundibulum of the brain were eager to come into the cerebral societies of heaven, just as the better lymph returns into the brain; and that such spirits apply themselves to those whom they see, attend to every particular, and tell others what they hear, restlessly going about hither and thither in imitation of the lymph that is in the infundibulum and is conveyed to and fro.[1]

[1] *Heavenly Arcana*, 4047, 4050.

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THE BONES

THE bones form the solid framework of the body, support its softer tissues, protect its delicate organs, and serve as levers by means of which the muscles produce movements. While the bones lack the finer organization and more active life of other parts, their firmness and hardness render them the ultimate foundations of the body, and hence they represent the ultimate faculties of the mind, upon which the higher faculties rest as on a base.[1] The bones offer the greatest resistance to forces from without, and therefore the mental faculties which they represent are such as tend to give individuality to the mind. In fact, the bones largely constitute what Swedenborg calls man's proprium.[2] The following is a very general statement of the correspondence of the bones:

"The societies of spirits to whom the cartilages and bones correspond are very numerous. But their nature is such that they possess very little spiritual life, just as the bones have very little life as com-

[1] *Heavenly Arcana*, 8005, 9163. [2] *Idem*, 149, 156.

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pared with the soft tissues which surround them, as, for instance, the cranium and the bones of the head have, as compared with both brains, the medulla oblongata, and the sensitive substances therein, and also as the vertebræ and ribs have as compared with the heart and lungs, and so on. It has been shown to me how little spiritual life there is in those who have reference to the bones. Other spirits speak by means of them, and they themselves scarcely know what they say; yet they speak, placing delight in that alone. Into such a state are they reduced who had led an evil life, and yet had some remains of good stored up in them. These remains constitute that little spiritual life after the vastations of several ages. They who emerge from vastations and serve for the uses which the bones perform have no definite thought, but a general thought almost indefinite. They are like those who are distraught, as if not in the body. They are sluggish, dull, stupid, and slow in everything; nevertheless they are at times not intranquil, because cares do not penetrate, but are dispelled in their general obscurity." [1]

The cartilages are closely related to the bones; for most of the bones begin as cartilage, and are tipped with cartilage at the joints. The cartilages are less hard and more elastic than the bones, and therefore correspond to similar faculties which possess less fixity and more adaptability. Cartilage becomes bone by the deposit of earthy

[1] *Heavenly Arcana*, 5560–5562.

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materials, which correspond to the facts of individual thought and experience.

The bones of the skull are divisible into cranial and facial bones.

The cranial bones, which surround the brain, are the frontal, parietal, occipital, temporal, sphenoid, and ethmoid bones. The frontal bone forms the whole of the forehead, and also the roofs of the eye orbits; it corresponds to the knowledge that man can know like God. The two parietal bones occupy the middle region of the roof of the cranium; they correspond to the knowledge that man can think like God. The occipital bone composes the lower part of the back of the cranium, and also extends along the base; it corresponds to the knowledge that man can feel like God. The basilar part of this bone seems to correspond to the faculty of putting lower creatures underneath, where they belong. The two temporal bones lie at the sides of the skull below the parietal bones; they correspond to the desire to master and subdue lower beings. The sphenoid bone occupies the base of the skull in front of the occipital bone, and also sends up a wing to each side of the skull; it corresponds to the knowledge of the right to rule those who are inferior. The ethmoid bone is in front of the basilar part of the sphenoid; it corresponds to vigilant watchfulness.

The facial bones are the nasal, inferior turbinate,

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lachrymal, maxillary, vomer, malar, palatal, and hyoid bones. The nasal bone forms the roof of the nose; it corresponds to the perception and knowledge of inward character. The inferior turbinate bone is attached above to the wall of the nose, and projects into the nasal cavity; it corresponds to the perception and knowledge of interior or psychological states of mind. The lachrymal bone is a thin scale of bone occupying the inner side of the eye orbits; it corresponds to a sorrowful state of mind caused by the contemplation of the sad things of human life. The maxillary or jaw bones, together with the remaining facial bones,[1] correspond to the love of dominating, the upper jaw being the love of dominating in general, and the lower jaw of dominating in particular.

The difference in the significance of the temporal and the maxillary bones is that the temporal bones are a love of being recognized and obeyed as master; while the maxillary bones are a love of impressing the currents of one's own life upon others, and not being influenced by their individuality.

The firm knowledge that man can feel, think, and know in imitation of God, the stern powers

[1] The vomer corresponds to unwillingness to be dominated by others; the malar or cheek bone, to determination not to be dominated; the palate bone, to the endeavor mentally to get over others; and the hyoid bone, to insistence on others doing just as they are told.

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of mastery, domination, and vigilance, the lofty contemplation of the pathetic side of human life, and the keen perception of inward character and states of mind are admirably adapted to fulfil the uses of the bones of the head; for these faculties are the highest of the ultimate faculties of the mind, and occupy an elevated and commanding place among them, which is similar to the position of the skull at the top of the skeleton.

The correspondence of the frontal, parietal, and occipital bones affords an explanation of the fact that they who have confirmed themselves against the existence of God, and in favor of Nature, have black skulls which look as if made of ebony, and which are impervious to the rays of heavenly light [1]; for in such persons the clear truth that man is made in the image and likeness of a living God becomes the dark falsity that he is a product of the mechanical forces of an impersonal Nature. Hence it was fitting that the Jews should crucify the Lord at Golgotha, the Place of a Skull; for they denied Him as their God, and sought to crush out forever both Him and His teachings.

The mental faculties answering to several of these bones do not seem to be represented in the Greatest Man of our planet; but the sphenoid bone is represented by Bornu, the nasal bone is represented by the Pamirs, the inferior turbinate

[1] *Heavenly Arcana*, 5563; *Heaven and Hell*, 354.

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bone is represented by Kashmir, and the maxillary and related bones are represented by Guinea. Others of them may also be represented upon our earth; for our knowledge of geographical correspondences is far from being complete.

In the Greatest Man of heaven the societies who constitute the provinces of the frontal, parietal, and occipital bones are they who are in the knowledge that the celestial angels alone are truly man, and are of all the angels most nearly fashioned in God's image. The societies who constitute the sphenoid bone are they who are conscious of their kingly power and right to rule over the evil and all lower beings, which they possess in consequence of higher spiritual development; for it is a universal law that the higher rules the lower. The societies who compose the temporal bones are they who exert a powerful control over all lower persons, forcing them to recognize their mastery and to obey their directions. The societies of the ethmoid bone are the watchmen of heaven, whose duty it is to take cognizance of what is occurring in every direction, and to warn the other societies of the hostile or surreptitious approach and wicked designs of evil spirits. Hence these societies, like the bones of the cranium, form a solid wall of defence and protection for the celestial heaven; and by their knowledge of the exalted nature of the celestial angels and the importance of their work, by

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their vigilant watchfulness, and by their masterful control and power of rule, they ward off all injurious intrusion, and enable the celestial angels to perform their duties peacefully and without molestation.

The societies of the nasal and inferior turbinate bones are the angels who possess a deep perception of the inward character of others, and their psychological states of mind. Hence these angels are closely associated with the societies of the nose, who are endowed with a very accurate perception of the inward quality of spirits. The societies of the lacrymal bone are the contemplative angels who are able to penetrate below the mere surface of human affairs, and to see the sad and affecting things in the lives of others. The societies of the other facial bones are the dominating angels who assist in guarding the approaches to the inmost heaven, and who force all who come toward them to receive the flow of life as it exists in heaven.

The bones of the trunk of the body are the vertebral column, the ribs, the sternum, the clavicle, the scapula, and the pelvis.

The seven cervical vertebræ of the backbone correspond to the faculty of making the best of disagreeable things and the faculty of scorn; the twelve thoracic vertebræ correspond to the faculties of superiority and sarcasm; the five lumbar vertebræ correspond to the faculty of

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indifference; the sacrum, formed by the union of five vertebræ, corresponds to the faculty of contempt; and the coccyx, which is composed of four small vertebræ, corresponds to the faculty of having nothing to do with persons for whom indifference or contempt is felt. The vertebral column supports the head, surrounds and protects the spinal cord, and together with the ribs serves to hold in place the various viscera of the trunk; and in correspondence with these uses, the faculties of making the best of disagreeable things, scorn, superiority, sarcasm, indifference, and contempt uphold the interior life of a man, make a firm protective medium for the working out of his purposes among others, and form an unyielding backing for his various mental operations.

In the Greatest Man of our earth, the vertebral column is represented by Colombia, Ecuador, Peru, Bolivia, Argentine Republic, and Chile. One of the most striking of geographical correspondences is presented by the Andes Range, which runs through these countries and probably constitutes most of their territory that belongs to the vertebral column; for the configuration of the Andes is very similar to the shape of the human backbone, Tierra del Fuego imaging the coccyx at the lower end.

In the Greatest Man of heaven, the angels of the backbone perform the functions of supporting

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the celestial heaven, of forming an encompassing wall for the societies who receive and convey impulses and messages between the inward and the outward heavens, and of furnishing to the more active and sensitive angels of the other parts of the trunk a strong backing for their opinions and actions.

The ribs correspond to the love of using one's own intelligence in thinking about subjects. There are twelve pairs of ribs. The seven upper or sternal ribs are connected by cartilage with the sternum, and correspond to various kinds of self-intelligent thinking. The eighth, ninth, and tenth ribs are attached in front by cartilaginous prolongations to the seventh rib; and they correspond to the love of thinking about or expressing ideas in one's own language. The eleventh and twelfth ribs terminate in free ends in the muscular walls of the abdomen; they seem to correspond to insistence on the use of one's own intelligence.

The heart and lungs correspond to the faculty of inspiration, and the ribs constitute the chief protection of these vital organs; and correspondentially the exercise of one's own intelligence in thinking forms an outward protective covering for the more interior thoughts and feelings which are received through inspiration from the other world.

In consequence of this signification of the

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ribs, the tortoise, which corresponds to the love of confirming one's self in ideas by the light of one's own intelligence, has a remarkable development of the bones of the chest, which compose the hard shell of the creature.

In the Word, ribs correspond to the love of thinking from one's own intelligence; and the statement that Eve was created from a rib taken out of Adam means that by marriage the husband's love of his own intelligence is transferred to the wife, and becomes in her a love of the man's proper wisdom:

"From these considerations it is manifest that the woman was created out of the man by the transcription of his own peculiar wisdom—that is, she was created out of natural truth; and that the love of this was transferred from the man into the woman, in order that it might become conjugial love; and that this was done in order that in the man there might not be the love of self, but the love of his wife. For the wife, by reason of her innate disposition, cannot do otherwise than convert the love of self with the man into his love for herself; and I have been informed that this is effected by virtue of the wife's love itself, neither the man nor the wife being conscious of it. Hence it is that no one can ever love his married partner conjugially who is in the conceit of his own intelligence from the love of self." [1]

In the Greatest Man of heaven, the societies

[1] *Marriage Love*, 193.

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who constitute the ribs are they who are not willing to receive their ideas through inspiration alone, but who insist on using their own intelligence in thinking about what is presented to them; and hence these societies form an ultimate plane and protection for the angels of the heart and lungs, who love to receive all their thoughts and feelings through inspiration from the inmost heaven or from the Lord.

The function of the ribs in the body is continued by the sternum or breast-bone, which corresponds to the love of establishing truth upon a firm foundation, so that there may be no doubt as to its correctness; and by the ensiform process, a cartilage at the base of the sternum, which corresponds to the faculty of putting aside all prejudice and prepossession in pursuit of the truth.

The sternum resembles in shape an ancient sword. It consists in adults of two pieces: the upper piece, or handle, is called the manubrium; and the lower piece, representing the blade, is called the gladiolus. The ensiform process attached to the sternum is like the point of the sword. Seven of the ribs are directly connected with the sternum; for the effort to establish the unquestionable validity of a proposition requires the co-operative exercise of one's own intelligence.

In the Greatest Man of the universe, the sternum is represented by our planet. Sweden-

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borg states that our earth is in externals and ultimates, and that many of its inhabitants are like the societies who compose the skin in the Greatest Man of heaven [1]; and Worcester seems to imply, by his amplification of this comparison, that our planet corresponds to the skin.[2] But Swedenborg states elsewhere that the angels who come from our earth possess superior wisdom [3]; and the mere capacity to receive and compare tactual impressions, which is the office of the skin, would not render our angels very wise. Again, Swedenborg says that our moon corresponds to the ensiform cartilage of the sternum [4]; and the close astronomical relation between the moon and this earth makes it very apparent that, if the moon represents the ensiform process, our earth must represent the sternum, for this process is united to the sternum.

The superior wisdom of our angels, as well as their externalism, can easily be explained by this theory; for, prone as the human mind is to all kinds of misapprehensions and fallacies, the faculty of using the reason, the judgment, and the testimony of the senses to prove or disprove beyond question any given statement, would necessarily tend to produce a high degree of

[1] *Heavenly Arcana*, 8630, 9360; *Spiritual Diary*, 1741; *Heavenly Arcana*, 5554.

[2] *Physiological Correspondences*, pp. 239, 240.

[3] *Heavenly Arcana*, 1531, 6929.

[4] *Idem*, 9236.

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wisdom, as it eliminates many avenues of error, and, so far as is possible for the finite mind, establishes the unassailable truth by accumulating a mass of conclusive data for its corroboration. It is evident that such a habit of thought is very characteristic of the scientific, philosophic, and historical mentality of our race; and it was probably the desire to test and establish, by personal and sensuous experience, the accuracy of their heavenly teachings, that caused the original fall of mankind in the Garden of Eden.

The manubrium, or handle, of the sternum represents the continents of North and South America, and the four sections into which the gladiolus is divided at birth represent the continental divisions of Africa, Europe, Asia, and Australasia.

In the Greatest Man of heaven, the angels of the sternum are the spiritual and natural angels who have come from our earth, and who, more than all the others, are in the love of placing truth upon a firm and enduring basis through confirming it by the arguments of reason, judgment, and common sense, by the scientific evidence of the senses, and by comparison with the teachings of Divine revelation. The celestial angels from our earth constitute the same faculty in the lobes of the cerebrum of the Greatest Man.

The clavicle or collar-bone and the scapula or shoulder-blade comprise the shoulder girdle, which

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forms a connecting link between the bones of the trunk and those of the upper limbs. The clavicle corresponds to the love of thinking out difficult problems, and the scapula corresponds to definiteness of aim; and just as these bones fortify the body's shoulders and back for bearing physical burdens, so the faculties of thinking out hard problems and of concentrating the energies on a definite purpose strengthen the mind for the weight of prolonged mental exertion.

In the Greatest Man of our earth, the clavicle, like the ribs and sternum, does not seem to have any representation; but the scapula is represented by Poland.

In the Greatest Man of heaven, the societies of the clavicle are they who like to spend their time in the thoughtful solution of all kinds of difficult questions; and the societies of the scapula are they who are never willing to undertake any project or study without first having a clear idea of what is to be accomplished, and who then steadily adhere to their aim in spite of other distracting issues. Hence these societies assist and strengthen the operations of the angels of the ribs and sternum, and also serve as a connecting medium between these angels and those composing the upper limbs.

The pelvis or hip-bone consists of three united bones called the ilium, the ischium, and the os pubis. The ilium is the upper and largest part.

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and forms the prominence of the hip; it corresponds to the love of doing no work whatever. The ischium is the lower and strongest part, and corresponds to the love of doing only such work as is necessary. The os pubis occupies the front of the pelvis, and supports the external organs of generation; it corresponds to the love of resting so as to enjoy sexual intercourse. These large, massive bones act as a restful foundation for the body when sitting, and as a protection for the abdominal viscera; and their function is to bring rest and recreation to the whole body.

In the Greatest Man of our earth, the pelvis is represented by the Saharan and Libyan deserts.

In the Greatest Man of heaven, such faculties as the love of doing no work or only so much work as is necessary may seem out of place, since heaven is a kingdom of uses; but even the angels cannot work all the time, and the influence of those whose chief joy is to recreate and feel well and do as little as possible is needed by the active angels to lead them to take beneficial repose from toil and exertion.

The bones of the upper limbs comprise the humerus, the ulna, the radius, the carpus, the metacarpus, and the phalanges of the fingers; and the bones of the lower limbs consist of the femur, the patella, the tibia, the fibula, the tarsus, the metatarsus, and the phalanges of the toes.

The humerus and femur correspond to the

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faculty of gathering and formulating concrete and scientific knowledge. The humerus is the bone of the upper arm, and corresponds to a love of gathering concrete knowledge both general and particular, which likes to enter more or less deeply into a subject; while the femur, or thigh bone, corresponds to a love of gathering condensed but accurate concrete knowledge about a subject, which does not care to enter deeply into it.

The humerus and the femur are two of the most powerful bones in the skeleton, in fact the femur is the largest and strongest of all the bones; and similarly as these two bones form the beginnings of the bony extremities of the body, so concrete knowledge constitutes the first going forth of the intellectual mind into externals, and hence into its powers.

In the Greatest Man of our earth, the humerus is represented by southern Russia, and the femur by northern Russia and Finland.

In the Greatest Man of heaven, the societies of the humerus are the angels who love to gather and to formulate all kinds of concrete and scientific knowledge, some of them preferring to get only general knowledge about a question, while others are fond of collecting every possible detail about the subject in which they are interested; and the societies of the femur are the angels who, although careful that their knowledge shall be accurate and reliable, do not seek for deep or

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detailed knowledge, but are satisfied with such brief information as can be gained in a cursory way and without profound mental application. The latter societies must be very numerous in consequence of the size of this bone.

The ulna and radius constitute the bones of the forearm, and the tibia, fibula, and patella compose the bones of the leg. The ulna, radius, and tibia correspond to the faculty of gathering and formulating abstract and philosophical knowledge. The ulna, the inner bone of the forearm, corresponds to an emotional love of abstract knowledge; the radius, the outer bone of the forearm, corresponds to a thoughtful love of abstract knowledge; and the tibia, the inner bone of the leg, corresponds to a matter-of-fact love of abstract knowledge. The fibula, which is a very slender bone on the outer side of the tibia, corresponds to the faculty of reflecting as to the exact meaning of words and statements.

The bones of the upper arm and thigh represent the faculty of gathering concrete knowledge, because they are nearer to the body, and hence have more feeling adjoined to them; while the bones of the forearm and leg represent the faculty of gathering abstract knowledge, because they are more remote from the body, and hence are more purely intellectual in their nature. Again, the bones of the arms are more emotional and interior than the bones of the legs.

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It is the above bones of the arms and legs that are referred to in the following statement:

"They correspond to bones, in the other life, who have studied various sciences and have made no use of them, as they who have studied mathematics only to find the rules, and have not regarded any use; or physics and chemistry only for the sake of experiment, and for no other use; also philosophy to find its rules and terms, only for the sake of the terms and for no other use; and likewise other things. They who become bones also, when they argue, scarcely discuss anything else than whether a thing is so or not. Hence it is evident that the majority of the learned within the church become bones." [1]

In the Greatest Man of our earth, the ulna is represented by Tibet, the radius by Mongolia, the tibia by Siberia, and the fibula by Turkestan.

In the Greatest Man of heaven, the societies of the ulna, radius, and tibia are the angels who, from the pure love of knowing, like to gather and to formulate all kinds of abstract and philosophical knowledge, the ulna societies loving to pore over and become completely absorbed in such knowledge, the radius societies giving a thoughtful but less profound attention to it, and the tibia societies simply gathering abstract knowledge as facts, without going deeply into philosophical researches. The societies of the

[1] *Spiritual Diary*, 5141.

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fibula are the angels who delight to ponder on the meaning of words and statements, and carefully to discriminate between terms, in order both to understand another's meaning correctly and to express their own ideas in unmistakable language.

The patella, or knee-cap, is a flat, triangular bone placed in front of the knee; it corresponds to the faculty of reason. The retinacula or lateral ligaments of the patella seem to correspond to the faculty of rational perception; and the ligamentum patellæ, in which the patella is developed and which arises from the lower part of the patella, seems to correspond to the faculty of rational inference.

This location of the patella makes clear Swedenborg's statement that the rational faculty is midway between the spiritual and the natural mind, and affords communication between them [1]; for the patella lies between the femur and the tibia, and the leg above the knee relates to the spiritual mind, and the leg below the knee to the natural mind.

In the Greatest Man of our earth, the patella is represented by northern Mesopotamia; while Armenia and southern Mesopotamia represent the retinacula and ligamentum patellæ.

In the Greatest Man of the universe, the patella is represented by the planet Saturn; for we are told that the spirits of Saturn relate to

[1] *Apocalypse Explained*, 995.

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the reason, and that they appear in the other world in the plane of the knees.[1] Moreover, in the arrangement of cerebral faculties portrayed by the geographical divisions of this earth, Mesopotamia as the reason lies between Persia as the imagination and Arabia as the fancy; and the planet Saturn is situated between the planets Jupiter and Uranus. Jupiter corresponds to the imagination;[2] and, reasoning by analogy, it is a legitimate inference that Uranus corresponds to the fancy. The belts of Saturn seem to correspond to the faculty of perception, and its moons to the faculty of inference.

The carpus, the metacarpus, and the phalanges comprise the bones of the wrist, the hand, and the fingers.

The carpus, or wrist bones, are eight in number, and are arranged in two rows, four adjoining the ulna and radius, and four adjoining the bones of the hand. The bones of the carpus correspond to the faculty of intuition, because intuitive perceptions have no firm, substantial strength from being based on outward facts, but owing to their speculative and subjective nature are easily swayed hither and thither, just as the wrist can be bent in almost any direction.

The extreme flexibility of the wrist shows how unstable and fluctuating are the conclusions of

[1] *Spiritual Diary*, 1516, 3328; *Heavenly Arcana*, 8947.
[2] *Heavenly Arcana*, 8630.

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this faculty, which are founded neither on reason nor on the evidence of the senses, but on purely subjective perceptions. The wrist bones connect with the bones of the forearm, because the faculty of intuition is often exercised to frame systems of philosophy or to determine the truth of philosophical statements.

The bones of the wrist are especially interesting now, as they and the ankle bones constitute the stage through which the world has just passed in its development from externals to internals that began about 1300 A.D.; for the historical development of the race has been like the growth of a human body, beginning at the head and terminating at the hands and feet, and then retracing its course back to the head again. Hence the uprising of false prophets and pretenders to supernatural powers, so familiar in our times, is easily accounted for as the product of the intuitive wrist phase of the world's progress; for the reception of supernatural intuitions and the intuitive belief in the miraculous are prominent features of the faculty of intuition. Moreover, it is almost certain that these intuitional manifestations will subside in a few years, and be superseded by an intellectuality characterized by fondness for abstract and philosophical knowledge and for reflection on the meaning of philosophical statements. Such abstract intellectuality is represented by the bones of the forearm and

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leg, and the race in its symbolic development is already beginning to form the forearms and legs of the historical human organism.

In the Greatest Man of our earth, the carpus is represented by India.

In the Greatest Man of heaven, the societies of the carpus are the angels who delight to employ intuition in dealing with all questions theoretical or practical, who always judge by what *seems* to be true or right or good, who are prone to believe in miracles and prophecies and visions, who are open to the reception of lofty intuitions from a higher sphere than their own, and who by sublime religious exaltation reach up intuitively to the Divine itself.

The metacarpus comprises the bones of the hand proper. There are five of them, four connecting with the fingers, and one with the thumb. The metacarpus corresponds to the inward memory. The first metacarpal bone, belonging to the thumb, corresponds to the memory of inward things learned by study, and the remaining metacarpal bones correspond to the memory of inward things learned by giving attention.

The metacarpal bones seem to represent merely the bare facts of inward memory, and the muscles surrounding them seem to represent the more active functions of accumulating and making use of these facts.

Closely connected with the bones of the hand

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in significance are the lines in the palm of the hand, and so much rubbish has been taught as palmistry that the correspondences of the principal lines of the palm will be briefly stated.

The right hand corresponds to what is done emotionally, instinctively, and easily; and the left hand, to what is done with more or less conscious thought and intellectual effort. The lines of the palm correspond to the faculty of recalling the things of inward memory. There are three large lines in the palm. The top line nearest the fingers (*linea mensalis*) corresponds to recalling inward knowledge in a matter-of-fact way; the middle line (*linea cephalica*), to recalling in a thoughtful way; and the bottom line, curving around the palmar eminence at the base of the thumb, to recalling in an emotional way. The above lines all refer to recalling what has been learned by merely giving attention to subjects of interest; but there is another set of lines, both horizontal and perpendicular, which occur on the eminence of the palm below the thumb, and these correspond to recalling what has been learned by study with more or less effort to fix in the memory. The horizontal lines correspond to an intellectual recalling of what has been studied or memorized; and the perpendicular lines, to an emotional recalling of what has been studied or memorized. The lines on the edge of the hand between the base of the little finger and the *linea mensalis*

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correspond to recalling and carrying out instructions. The first set of lines on the hand's edge below the *linea mensalis* correspond to the faculty of recalling names; the second set, to the faculty of recalling the past; and the third set, to the faculty of reminiscing. The deep lines on the wrist correspond to recalling by intuition or guessing.

There are also other lines in the palm, and even the sets of lines above enumerated intermingle in an intricate way; so that, as every line has its special significance, it would require a volume of considerable size to illustrate the meaning of these lines in individual cases.

It is plain that the Lord's calling to mind or remembering the Church is meant in the following passage by His having graven Zion on the palms of His hands:

"But Zion said, Jehovah hath forsaken me, and the Lord hath forgotten me. Can a woman forget her sucking child, that she should not have compassion on the son of her womb? Yea, these may forget, yet will I not forget thee. Behold, I have graven thee on the palms of My hands; thy walls are continually before Me." [1]

In the Greatest Man of our earth, the bones of the hand are represented by China and Manchuria.

In the Greatest Man of the universe, the bones

[1] Isaiah xlix., 14–16.

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of the hand are represented by the planet Mercury.[1]

In the Greatest Man of heaven, the societies composing the bones of the hand are the angels who love to gather and treasure up vast stores of inward knowledge; and they probably travel through the whole heaven, collecting knowledge on all kinds of interior subjects wherewith to enrich the memory.

The phalanges, or bones of the fingers, are fourteen in number, three for each finger, and two for the thumb. The finger bones correspond to the faculty of attention to inward knowledge, and the thumb bones correspond to the faculty of learning inward knowledge by study. The phalanges of the first finger correspond to attention to feelings and perceptions; those of the second finger, to attention to thoughts; those of the third finger, to attention to knowledge; and those of the fourth finger, to attention to statements.

Hence the fingers and thumb are joined to the extremity of the hand; for attention to knowledge and the learning of it must precede the storing up in the memory, and these faculties are likewise more external than the memory. Moreover, we mentally take hold of things which we wish to give attention to and learn about, just as we use the fingers and thumbs to grasp objects.

In the Greatest Man of our earth, the finger

[1] *Heavenly Arcana*, 6808.

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bones are represented by the islands of Japan, Kiushiu representing the first finger, Hondo the second finger, Yezo the third finger, and the Kurile Islands the fourth or little finger. The thumb bones are represented by Korea.

In the Greatest Man of heaven, the societies constituting the phalanges of the fingers are the angels who are fond of giving attention to all sorts of interior and subjective knowledge, finding their chief delight in such intellectual pursuits. Some of the societies are distinguished by an emotional attention, giving heed principally to emotions and perceptions in what they read and hear; some are marked by a thoughtful attention, being intent for the most part upon the thoughts that are expressed; others are characterized by a knowing attention, liking to know about subjects merely as matters of fact; and still others pay great attention to statements, gleaning from various sources what different authorities have to say about a question. The societies composing the phalanges of the thumb are they who find their greatest pleasure in studying and memorizing inward knowledge.

The bones of the feet comprise the tarsus, the metatarsus, and the phalanges of the toes.

The bones of the tarsus really answer to those of the carpus or wrist; but they are differently arranged, being so placed as to afford a firm basis for supporting the rest of the body when

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erect, and while they consequently have greater solidity than the wrist bones they lack the mobility of the carpus. The bones of the tarsus, like those of the wrist, may be separated into two rows, the astragalus and the calcaneum constituting the back part of the arch in which the bones of the foot are constructed, and the other five tarsal bones uniting with the foot bones to constitute the forward part of the arch. The astragalus, which articulates above with the tibia, corresponds to the faculty of making allowances for the shortcomings of others; and the calcaneum, which lies below and partly behind the astragalus, and transmits most of the weight of the body to the ground, corresponds to the faculty of finding good in every one. The remaining bones of the tarsus correspond to various kinds of rejoicing over the good things of others and over one's own possessions.

In the Greatest man of our earth, the tarsus is represented by the Greater and Lesser Sunda Islands, Sumatra representing the astragalus, and Java the calcaneum.

In the Greatest Man of heaven, the societies of the tarsus are the angels who love to make allowances for others' faults and imperfections, to see whenever possible the good that is in them, and to rejoice at the good things which others have without envying them such possession; for they always bear in mind their own happiness

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which the Lord has bestowed on them, and remember that no one angel can possess all the virtues or all the good things of heaven. Hence these societies are well fitted to go about, together with the angels of the feet proper, from one society of heaven to another; for they are glad to see the varieties of happiness and possession in heaven, and are not subject to pangs of envy at beholding them.

The metatarsus constitutes the bones of the foot proper. They are the same in number as the bones of the hand, and correspond to the memory of outward knowledge.

In the Greatest Man of our earth, the bones of the metatarsus are represented by Australia; and in the Greatest Man of the universe, they are represented by the planet Venus.[1]

In the Greatest Man of heaven, the societies comprising the metatarsus are the angels who love to gather and remember all outward facts about heaven and the universe in general. Hence, as the feet of heaven, they must be fond of traveling from place to place, and storing up accumulations of outward knowledge about the places they visit and the persons they meet.

The phalanges of the toes answer to those of the fingers. The bones of the hallux or great toe correspond to the faculty of learning outward knowledge by study, and the bones of the other

[1] *Heavenly Arcana*, 7253.

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toes correspond to the faculty of giving attention to outward knowledge.

In the Greatest Man of our earth, the bones of the great toe are represented by Tasmania, and the bones of the other toes by New Zealand.

In the Greatest Man of heaven, the societies composing the phalanges of the toes are the angels who like to devote their time to the study of outward matters in general, and who are fond of giving attention to all kinds of objective problems and knowledge.

It is noteworthy that the bones do not always include the whole of the faculties which they represent; for in some instances other and more active parts of the same faculties are represented by the muscles which overlie the bones. In many cases, however, the muscles have an entirely different signification from the bones with which they are connected.

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THE NERVES AND THE MUSCLES

THE great function of the nerves is to transmit impulses from the brain to the body, and impressions from the body to the brain, thereby connecting brain and body; and hence the nerves consist chiefly of nerve-fibres, which ramify as nerve-trunks throughout the body. But the impulses of the brain sent along the nerves to different parts of the body would be impotent to effect anything therein without the co-operation of the muscles, which, by their inherent power of contracting and pulling upon the bones, produce the principal movements of the body. Therefore the nerves may be called the powers of the mind, and the muscles the powers of the body; and their joint activity in accomplishing the purposes of the mind in the outward world affords an excellent illustration of the frequent juxtaposition in the body of antithetical tissues and faculties which exert a conjunctive and restraining influence over each other.

The principal nerve-trunks consist of the

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cranial nerves, which issue from several parts of the brain, and the spinal nerves, which emanate from the spinal cord; and the nerve-fibres conveying the impulses of the brain to the body are called efferent nerves, while the nerve-fibres carrying the impressions of the body to the brain are termed afferent nerves.

It is probable that every faculty residing in the brain is connected by nerve-fibres with the respective part of the body which corresponds thereto; but if such is the case, the nerve-fibres proceeding from several cerebral faculties must unite in forming a nerve-trunk, for the same nerve often ends in different organs and tissues of the body. Nor is it likely that every nerve terminating in an organ connects that organ with the same cerebral centre; for many organs of the body have two nerves, one of which increases the organ's activity, and the other decreases it, and such opposite influences can scarcely originate in the same part of the brain. The exact significance of the nerves is in fact shrouded in obscurity, and can be unraveled only by a very detailed study of their correspondences.

Besides the nerve-trunks and their branches, there are many nerve-centres or ganglia distributed throughout the body. These consist primarily of small communities of nerve-cells, and may be compared to little brains in the

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body; for their activity is not confined to conveying messages quickly and accurately, but they exercise some discretionary powers of action which are independent of the conscious thought and effort of the brain.

The medulla oblongata or spinal bulb and the spinal cord combine these two functions of nerve-trunks and nerve-centres; and they constitute the great centres of reflex and automatic action in the body, as well as the general channel through which most of the nerves pass before being separately distributed. The medulla oblongata is a part of the brain, and is continuous, through the great foramen at the base of the skull, with the spinal cord, which is really the bodily counterpart of the medulla.

The medulla oblongata seems to act as the special agent of the cerebellum, as the emotions having their seat in the cerebellum affect the body and regulate its involuntary operations mainly through nerves emanating from the medulla; whereas the spinal cord seems to act as the special agent of the cerebrum, because the volitional and other intellectual activities of the cerebrum are largely communicated to the body through the spinal nerves. The white matter of the spinal cord seems to be concerned chiefly with receiving impulses, and the gray matter with sending them forth, the neuroglia-cells of the white matter, with their tentacle-like pro-

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cesses, taking in the messages, and the cells of the gray matter, with their long fibres, sending them out. Hence the power of reflex action is possessed by the gray matter, and not by the white substance of the cord.

The spinal bulb has a more intense life than the spinal cord; for it is in closer touch with the cerebrum and cerebellum, and gathers messages more directly from them, sending out some of these through nerves issuing from itself, and communicating others to the spinal cord. The spinal cord receives its cerebral messages through the spinal bulb, and is entrusted with the general duty of having them performed; and the filum terminale, the downward prolongation of the pia mater of the cord, stands like an overseer in the midst of a leash of nerve-roots, called the cauda equina, to see that the instructions of the spinal cord are faithfully carried out.

In addition to the large nerve-centres of spinal bulb and spinal cord, there are small ganglia on the posterior roots of the afferent spinal nerves, the chief function of which seems to be to gather in the messages brought by the afferent nerves, and to use their intelligence in reporting to the spinal cord only such impressions as are of sufficient importance to claim its attention. This no doubt is a wise provision against the spinal cord becoming confused by the receipt of a multiplicity of nerve messages without any dis-

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crimination between what is trifling and what is important.

There is also a whole series of ganglia lying in a double chain in front and at the sides of the spinal column, and connected with one another and with the spinal nerves by cords. These ganglia with their extensions, which form great networks or plexuses upon the heart and about the stomach and other abdominal viscera, comprise the sympathetic nervous system. The principal function of this system seems to be to tap the nerve-wires of the spinal nerves, and to spread through the whole community information of all affairs of importance that are reported from each section, and from the spinal cord itself; thus it serves to bind together the several divisions of the bodily community by communicating to all the knowledge of everything important that happens in any one part.

The consideration of the correspondences of the nerves is complicated by the fact that several collections of nerves differ from ordinary conductive nerves in that they themselves correspond to mental faculties; thus many of the nerves of the arms and legs correspond to the faculties of determination and volition, and a detailed study of the nerves may disclose other faculties. It is impossible to state just how these nerve faculties operate as compared with the other nerves of the body; but it is probable

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that they are simply expansions of conductive nerves that lead down from the cerebral faculties, and so operate in a manner similar to that of ordinary nerves, except that they act not upon the same faculties in the body, but upon different faculties represented by the muscles.

As the nerves are the great conjoining media, not only between the brain and the body, but also between the different parts of the body, therefore the sinew or nerve on the hollow of Jacob's thigh being strained while he wrestled with the angel signifies the shutting-off of communication between the higher and the lower, and the consequent weakening and vitiation of the lower by separation from its interior and animating life.[1]

In regard to those in the other life who relate to the nerve-centres in general, Swedenborg says:

"There are many centres and bases in each heaven; by them there is immediate communication among the heavens, and with God the Messiah. They are in a most tranquil state, and cannot be compared more aptly than to the ganglia of the human body, and the nodes in the brain, into which flow innumerable fibres, and are there as it were formed anew; and so the things which are around are disposed according to the ends in the beginnings, and thus all these in most perfect order and form, by God the Messiah alone." [2]

[1] Genesis xxxii., 25, 32; *Spiritual Diary*, 2613, 2617.
[2] *Spiritual Diary*, 305.

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In the Greatest Man of our earth, the spinal bulb and cord and the nerves in general have no known representation; but the special nerves of the arms are represented by Switzerland and Tyrol, and those of the legs by Italy. Italy images the most remarkable of all geographical correspondences; for the Italian peninsula bears a wonderful likeness to the human leg from knee to foot, thus picturing in nature the anatomical appearance of the combined nerves of the leg. The mainland portion of Italy represents the volitional nerves of the thigh.

In the Greatest Man of the universe, it is probable that the medulla oblongata, and consequently the spinal cord as its bodily counterpart, is represented by the asteroids of our planetary system; for the medulla oblongata lies just below the middle brain, and the orbit of the asteroids is next beyond the orbit of Mars, which planet corresponds to the middle brain. Moreover, the numerous fibres composing the medulla are well portrayed by the large number of the asteroids.

In the Greatest Man of heaven, the societies of the medulla oblongata and the spinal cord are the angels who serve as intermediates between the inmost and the outer heavens, and who, on the one hand, receive from the celestial angels messages as to what they wish done in or by the lower heavens, and, on the other hand, communicate

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to the celestial angels accurate knowledge of what is taking place in these heavens. These societies probably exercise also some independent powers of action answering to the reflex and automatic activities of the medulla and cord, presiding over many of the involuntary operations of the Greatest Man, and acting on their own initiative in cases of emergency where prompt action is necessary.

The societies of the nerve-trunks are the angels who work in unison with the above societies, and who act as messengers between them and the more or less distant provinces of the Greatest Man, their chief duty being to convey intelligently and quickly the messages which they receive.

The societies of the sympathetic nervous system are they who keep informed of all the great internal movements in the lower heavens, and who report to the whole community everything of importance affecting it, whether with reference to the operations of the inmost heaven in the lower heavens or with reference to the actions of its component societies. Hence these angels bind together many heavenly provinces by their prompt communication of news of what is happening in every quarter.

Many of the muscles overlying the bones and cartilages correspond to more active and more emotional parts of the same faculties which the

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bones and cartilages represent, and they often correspond to the love of exercising these faculties; but there are a large number of muscles which, although attached to bones, yet have an entirely different signification.

The chief function of the muscles of the body is to produce movements, which the muscles perform by their inherent power of contracting. Although the muscles have little spontaneous contractility, and usually depend upon the stimulus of the nerves to put them in action, nevertheless their co-operation with the nerves is essential for the production of any bodily movement, and to a large extent the muscles can refuse to act at the instigation of the nerve impulses.

Hence, as many of the nerves are expressions of the volitional forces of the mind, so many of the muscles must be the expression of the mental powers which resist volitional impulses, or else co-operate therewith in their own way and with their own intelligence, and which do not act merely as transmitting mechanisms. It is therefore to be expected that some of the muscles would represent such faculties as the will and determination not to do undesired acts, caution, self-reliance, and responsibility; and in fact, these are the significations of many of the large muscles of the body, as will be seen in the following enumeration of the correspondences of several important muscles.

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Of the muscles of the neck, the sterno-cleido-mastoid muscle corresponds to determination not to do a thing. This muscle has two origins; for it arises from the upper surface of the manubrium of the sternum, and also from the adjacent portion of the clavicle, the fibres of the two muscles joining as they pass upward to insertion in the mastoid process and the temporal and occipital bones. The clavicular fibres of the sterno-cleido-mastoid muscle, which are deeper and mainly attached to the apex of the mastoid process, correspond to determination not to do undesired acts; while the sternum fibres, which occupy the outer position and are attached to the temporal and occipital bones, correspond to determination not to be forced to do undesired acts. By the action of the clavicular fibres the head is bent forward, and by the action of the sternal fibres it is tilted backward; and these postures of the head are instinctively assumed when determination not to do undesired acts and determination not to be forced to do them are given physical expression. It is doubtless owing to the presence of the sterno-cleido-mastoid muscle in the neck that the Jews in their obstinacy were called "a stiff-necked people." [1] The splenius muscle corresponds to undauntedness. The trapezius muscle, which occupies also the upper part of the back, corresponds to self-reliance. The action

[1] Exodus xxxii., 9; xxxiii., 3, 5; xxxiv., 9.

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of the splenius and trapezius muscles in turning and drawing back the head produces attitudes which are very expressive of fearless and self-reliant moods. The muscles of the arms and forearms correspond in general to the faculty of caution. The latissimus dorsi muscle, which is a large muscle situated mainly in the lower and superficial part of the back, corresponds to responsibility in the conduct of affairs. The muscles of the thighs correspond in general to different aspects of the faculty of self-esteem. Of the muscles of the legs, the gastrocnemius muscle corresponds to the will never to yield, the peronei muscles correspond to the will not to yield unless forced to do so, the extensor longus digitorum muscle corresponds to the will to yield if it is expedient to do so, and the soleus muscle corresponds to persistency. The tendon of Achilles, the strongest of all the tendons in the body, corresponds to stubbornness.

These muscles form a bulwark against overwrought nervous activity; and, by reason of the subtle relation and reaction which exist between mind and body, it seems likely that the development of the foregoing muscles by physical exercise will tend to strengthen the corresponding faculties of the mind.

It is noteworthy that the cerebral centres which control the muscles of the arms and legs, and which are situated along or near the fissure of

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Rolando, seem to correspond to the faculties of determination and volition, and not to the faculties which these muscles represent. If such is the case, it is perhaps in consequence of the nerves of the arms and legs, which correspond to determination and volition, acting directly upon the muscles to produce voluntary movements. In most cases, however, such as the cortical centres for speech and for the special senses, it is probable that the faculties of the brain are connected by the conjoining nerves with their bodily counterparts, and not with antithetical tissues.

In the Greatest Man of our earth, the above-mentioned muscles are represented by a portion of Switzerland (including part of France), Austro-Hungary, Spain, and the islands of Sicily, Sardinia, Corsica, Elba, and Malta.

In the Greatest Man of heaven, the angels representing the muscles are in many instances societies who constitute more active and emotional parts of the societies representing the bones, and in other instances they are societies who possess most strongly developed the determination and will not to do undesired acts, caution, self-reliance, and self-esteem. These angels co-operate with the impulses received from the angels of the inmost heaven, but use their own wisdom and self-reliance in carrying out the instructions sent to them,—at times, no doubt, refusing to execute directions which they

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know from experience to be detrimental to the good of the community.

There are a number of muscles, such as the muscles of the heart, diaphragm, and cheeks, which are not considered here, because they form component parts of special organs and sections of the body which will be treated of later.

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THE HEART AND THE LUNGS

THE heart and lungs correspond to the faculty of inspiration; the heart corresponding to its emotional, and the lungs to its intellectual, aspects.

There are many proofs of such a correspondence. The heart and the lungs are the most vital organs of the body; for while any other parts of the body may be injured without destroying life, a stoppage of the functions of the heart and lungs, by injury either to them or to the medulla oblongata which controls their operations, is certain to cause death. The heart, lungs, and blood-vessels constitute a vast unified system, which penetrates into almost every tissue of the body; and the whole physical organism is more or less affected by the impulses of the heart communicated through the blood-vessels, and by the respiratory vibrations of the lungs communicated through the ligaments and visceral sheaths. So essentially vital, so comprehensive, and so inwardly animative a system can only be the embodiment of inspiration; for this faculty is the

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most vital, the most widespread, and the most profoundly influential in human life. We are told that everything that a man wills or thinks flows into him from the Lord through angels and spirits,[1] and that the quality of every one's life is determined by the nature of his reception of such influx.[2] As the inflow of feelings and thoughts from the other world is through inspiration, a man could not have a single feeling or thought, and so could not live at all, without the constant operation of this faculty; as a man thinks and wills in many ways and on different planes, such inspiration must, like the blood-vessels, extend to every province of his mind; and as the quality of a man's whole conscious life depends upon the degree in which he favors inspiration from good or evil spirits, the faculty of inspiration profoundly affects his entire nature, just as the motions of the blood-vascular system and the vibrations of the lungs deeply influence the condition of the whole body.

Moreover, the activities of the whole mind are animated and purified by inspiration from on high, in the same way that the activities of the body are animated and purified by the heart and lungs.

Although no specific meaning of the heart is

[1] *Heavenly Arcana*, 4077, 6307; *Divine Providence*, 287, 308; *Heaven and Hell*, 391.

[2] *Heaven and Hell*, 569; *Intercourse between the Soul and the Body*, 13.

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given in the Bible, it is significant that Aaron was commanded, when coming to inquire of the Lord, to bear on his heart the Urim and Thummim, by means of which inspirational answers and perceptions of truth were revealed.[1]

The heart corresponds to the reception of inspirational emotions and words of inspiration, and the lungs correspond to the reception of inspirational thoughts. There is an analogy between the functions of the heart and the lungs; for the heart furnishes a liquid for the nourishment of the tissues of the body, while the lungs provide a gas for the same purpose, both fluids being necessary for the maintenance of life: and, spiritually, the heart supplies a stream of inspirational teaching, which is the blood, founded upon its inspirational emotions, perceptions, and words of inspiration; and the lungs provide pure spiritual truth, which is the oxygen, assimilated and interpreted by inspirational thought.

The pericardium, a membranous sac which invests the heart and the commencement of its great vessels, and which shelters the heart and facilitates its pulsations, seems to correspond to the love of seeking inspiration; for inspiration must be sought and striven after before it is received, the desire and effort being like an outer covering within which the inspiration comes.

[1] Exodus xxviii., 30; *Heavenly Arcana*, 9905; *Apocalypse Explained*, 431.

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Like the heart, the lungs are surrounded by a special membrane called the pleura, an outer and thicker layer lining the walls of the thorax, and an inner delicate and transparent layer closely adhering to the lungs themselves. The pleura seems to correspond to the thought that man should not attempt to solve deep spiritual questions by his own intelligence, but should submit his mind to the light of inspiration from above.

The arteries and capillaries, which convey the bright, red blood to the tissues, correspond to the love of clear thinking about inspirational instruction on the various planes and provinces of human life; and the veins, which bring back the blood to the heart, now rendered dark and gross by the addition of the waste products of the tissues, correspond to the love of considering the inspirational teaching of the blood in the light of one's actual knowledge and experience. The chief difference between arterial and venous blood is the existence of more carbonic-acid gas and less oxygen in venous than in arterial blood; and as oxygen represents pure spiritual truth,[1] carbonic-acid gas, which is produced in proportion to the activity of the tissues, must represent the natural truth or the appearances of truth which result from the mental operations of the individual, and of which the mind needs constantly

[1] See Worcester, *Plants of the Bible*, p. 324.

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to be purified by the entrance of additional spiritual truth.

The great function of the blood is to nourish the tissues of the body and to carry away their waste products; and correspondentially this office is performed by the currents of inspirational teaching to which the blood in general corresponds. The blood is composed chiefly of a colorless liquid called plasma, and of minute solid substances known as red and white corpuscles. The liquid plasma seems to correspond to the inspirational teaching itself; the red corpuscles, the peculiar characteristic of which consists in taking up oxygen in the lungs and carrying it to the various tissues, seem to correspond to the love of thinking about spiritual subjects; and the white corpuscles, which are intimately concerned with the building up of tissues in need of repair, and which are remarkable for their constant activity, seem to correspond to the love of useful employment and practical activity. The inspirational quality of the blood, however, does not comprise all its uses; for in addition to the central function of supplying the inspiration currents so necessary to human life, the arterial system has the function of providing all the other elements needful for the nourishment and life of the body, while the venous system has the task of mingling together the materials from which the blood is compounded.[1]

[1] *Economy of the Animal Kingdom*, 199, 201.

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Correspondentially, the heart receives the dark venous blood of obscured inspirational teaching into the audience-chamber of the right auricle, and then pours it into the right ventricle, to be submitted there to the broodings of emotional and even verbal inspiration, and afterward sends it on to the lungs for further enlightenment and purification. The lungs, receiving intellectual inspiration and illumination from the other world, thoughtfully discriminate between the true and the false in the blood by applying to it the test of pure spiritual truth, and thereby they eliminate the impurities of natural desire and the fallacies of natural thinking. The blood of inspirational instruction, now rendered bright and clean by this refining process, flows down to the reception-room of the left auricle, and is emptied thence into the left ventricle, which finally speeds it forth on its errands of usefulness with the strong conviction that it is indeed the living truth.

The work of the ministry resembles the functions of the heart, lungs, and blood-vessels; for true ministers preach spiritual truth and practical truth adapted to men's needs, in order that men may build up such teaching into their characters, and the truth which they preach is vivified and enlightened in proportion to the emotional and intellectual inspiration which they receive from on high. Like the heart, they furnish the

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arterial blood of fresh, cordial, spiritual instruction, and like the arteries and capillaries they direct and apply it to all the different planes and occupations of human activity, and thus animate, inspire, and uplift men in their daily vocations; and in return they receive from men, like the waste elements taken up from the tissues by the veins, the obscurities and questionings of natural thinking, based on actual experience and natural desire. Ministers meditate over these obscurities in their hearts, seeking the light of inspiration on them, and they perceive the fallacies and remove the impurities through the inflow of inspirational thought and feeling and by the aid of their knowledge of pure spiritual truth; and then they preach anew the real, spiritual truth, and preach it all the more clearly and earnestly and forcibly for having considered and illuminated the conditions and questions of practical life. On the other hand, the parts of the body which are animated and nourished by the blood are like the laity, who give heed to the instruction of their ministers, and accept it for the guidance, nutriment, and inspiration of their lives, and who then bring back for solution the obscurities and problems which arise in actually living the truth or in considering it from a practical standpoint.

The function of the ministry as the Lord's representatives is a feeble imitation of the Lord's perfect work while on earth; for He above all

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others taught with conviction the pure truth of spiritual life which He received from the inspiration of the Father's love and wisdom, and He pondered over and absolutely clarified the questionings and gross thoughts which His followers brought to Him for enlightenment, and He gave ever freely and divinely of the vital truth to all who were willing to receive. It is fitting, therefore, that He should have called the bread and the wine of the Holy Supper His body and His blood; for His body is the divine love of doing good, and His blood is the divine truth that teaches the way.

Closely associated with the blood-vascular system is the lymphatic system, which in like manner ramifies throughout the body; for all parts of the body containing blood capillaries also contain lymphatic vessels. These vessels serve to convey the lymph from the tissues back to the blood again; for the blood does not come into direct contact with the tissues of the body, but the nourishment for the tissues exudes from the blood-vessels in the form of lymph, which is the same as the blood without the red corpuscles; and any excess of lymph beyond the needs of the tissues is gathered up by the lymphatics, and returned to the blood for further distribution and service. The lymphatics also serve to convey to the blood-stream materials of food not directly absorbed by the blood-vessels of the alimentary canal.

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The great majority of the lymphatic vessels pour their contents into the thoracic duct, lying in front of the spinal column, which in turn empties the lymph into the beginning of the left innominate vein in the neck. The lymphatics are connected at intervals with small lymphatic glands, in which corpuscles similar to the white corpuscles of the blood are multiplied by cell division. The lymphatic vessels carrying lymph from the intestines are called lacteals, because during digestion they are filled with a milky fluid. The lacteals of the small intestine not only form networks in its walls, but also send prolongations into little club-shaped processes called villi, which are concerned in the absorption of digested food.

Food corresponds in general to the new things which are taken into the mind either permanently or temporarily, according as after examination and consideration they are found useful and incorporated or are found useless and rejected. The lacteals which take up food already examined and digested correspond to the faculty of being on the lookout for all knowledge that can be made useful for one's purpose; and the little villi determine whether the knowledge presented can be made use of, and they accept whatever can be used. The milky fluid, or chyle, in the lacteals, representing the knowledge accepted by the villi as suitable for the purposes of the

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bodily community, is conveyed to numerous lacteal or lymphatic glands in the layers of the mesentery, which glands correspond to the faculty of discerning the special uses for which the particulars of knowledge are best adapted, and is then conducted to the receptacle of the chyle in the lower part of the thoracic duct. The receptacle of the chyle corresponds to the faculty of collecting such knowledge, and the thoracic duct corresponds to the faculty of perceiving the respective provinces or purposes of the mind where the collected particulars of knowledge can be employed to the best advantage. By the thoracic duct the particles of chyle are turned over to the blood-vessels for distribution to the mental provinces where they are most likely to prove useful.

But some of the lymph does not find employment in the province whither it has been dispatched, and has to be removed from the tissue which is not in need of such service as it can render; and the lymphatic vessels which take up the unused portion of the lymph are perceptions that such unapplied knowledge can be used elsewhere, and these vessels conduct the lymph to the lymphatic glands, which are skilful in discerning the peculiar aptitudes of the corpuscles of the lumph, and in specializing them into the distinctive functions for which they are pre-eminently fitted. New sets of lymphatics, which,

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in consequence of the thorough examination by the lymphatic glands, and perhaps also in consequence of the character of the work performed by the lymph-corpuscles in the tissue from which they were removed, know the particular use which each corpuscle can best perform, now convey the particles of lymph, with their recommendations, to the thoracic duct, to be thence distributed anew in the light of their clearly defined capabilities.

The operation of the lymphatic vessels mirrors a distinct mental process; for it often happens that we intend to make use of a fact gathered in reading, which, when we come to write it down, does not have the close relation to our subject that we at first supposed. We presently perceive, however, that it can be made use of in some other way; and then by the very reason of its unsuitableness for the place for which it was originally intended, and by a close investigation of just what purpose its import fits it for, we are enabled to make a good use of the fact, having a clear idea of the exact line of thought for which it is suited. The function of the lymphatic glands, also, is like that of employment bureaus in organized human society, where applicants for work are received and examined, and where they are classified according to their particular aptitudes and abilities.

In the Greatest Man of our earth, the heart and

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lungs are represented by the countries of the eastern Sudan.

In the Greatest Man of the heavens, the societies of the heart and the lungs are the angels who more than any others receive inspiration from the inmost heaven and from the Lord. The angels of the heart receive the deep impulses of the Lord's love, vivifying their minds with new perceptions and even with oral words, and inspiring them by the pulses of warm emotion freely to teach the truth of life to all according to their needs. The angels of the lungs co-operate in this great work of spiritual instruction, and by their reception of thoughtful inspiration from above and their knowledge of pure spiritual truth they are enabled clearly to distinguish between what is true and what is false, and to purify the teaching of the angels of the heart from many natural obscurities and gross tendencies which have crept in, and which the angels of the heart are less able than they intelligently to eliminate. In this way the societies of the lungs render wiser and better the teaching of the societies of the heart. The angels of the lungs excel in inspirational intelligence; and the angels of the heart, in inspirational goodness and wisdom.

The societies of the pericardium are the angels who seek for inspiration on all doubtful matters, and who are a help and a protection to the

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societies of the heart by reason of their insistence on the need of inspiration, and their earnest endeavor to receive it.

The societies of the pleura are the angels who are emphatic as to the necessity of discarding self-intelligence in spiritual matters, and of earnestly looking to the Lord for the inspirational enlightenment of the thoughts. Hence, like the societies of the pericardium in relation to the angels of the heart, these societies act as a protective covering to the angels of the lungs, and by their knowledge of the insufficiency of man's own wisdom to fathom many spiritual problems, and their insistence on the need of inspiration from on high, they facilitate the inspirational thinking of the angels of the lungs. The angels of the pleura and pericardium are eloquent as to the inadequacy of human wisdom to explore the secret recesses of spiritual truth, and as to the wrongness of employing one's own intelligence in the effort to penetrate such mysteries, and they insist strongly upon the need of earnestly and devoutly seeking the heavenly illumination which is shed upon man's purblind mind when he approaches the Lord in the proper spirit; but all the real thinking and inward understanding of spiritual questions devolve upon the societies of the heart and lungs, the angels of the pleura and pericardium lending only a sympathetic and receptive support.[1]

[1] *Spiritual Diary*, 1721–1726.

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The angels of the pleura and pericardium serve especially to protect the heart and lung societies from the hardness of the societies of the ribs, who are fond of exercising their own intelligence and care little for inspirational thinking.

The societies of the arteries and capillaries are they who love to think the clear truth of inspirational teaching and suggestion, and to convey it to those who need its ministering and uplifting aid; and the societies of the veins are they who love to consider such teaching and suggestion in the light of their own experience and knowledge, and to gain enlightenment on the problems arising from such consideration.

The societies of the entire blood-vascular system, comprising the heart, lungs, arteries, and veins, seem to constitute the organized ministry of heaven, the societies of the heart and lungs consisting of the best and wisest ministers who receive the highest degree of inspirational goodness and wisdom, and the societies of the arteries and veins consisting of the ministers who are distributed throughout the heavenly provinces, and who are animated and enlightened in their work by the societies of the heart and lungs.[1]

The angels of the plasma and red corpuscles seem to be the emissaries sent out from the province of the heart to teach and enlighten the different heavenly provinces whenever necessary.

[1] *Heaven and Hell*, 393.

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There must always be questions and obscurities arising in all parts of heaven which cannot be satisfactorily answered and dispelled by the angels of these societies, who need the influence of inspiration to clear their minds on the subject; and this function is no doubt performed by the angels of the plasma and red corpuscles. The instruction must differ, however; for the plasma, which contains in solution many nutritive materials for the use of the tissues, exudes from the blood-vessels and comes into direct contact with the tissues, bringing them nourishment and removing waste debris; while the red corpuscles remain within the blood-vessels, and transmit their oxygen through the walls of these vessels. These differences indicate that the angels of the plasma enter more or less fully into the states of the societies they visit, instructing them in all kinds of substantial truth necessary for their sustenance and development, and removing their difficulties as far as possible; but that the angels of the red corpuscles love to remain in a spiritual state of mind, and to view everything from a spiritual standpoint, and so they stay in the more spiritual atmosphere of the blood-vessels, uplifting the mind, by their teaching of pure spiritual truth, to a higher level of spiritual thought and perception than is habitual to these societies.

The white corpuscles, which exhibit all the characteristics of the simple cells of which the

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whole body is composed, and which, although not as yet differentiated to any particular line of activity, nevertheless possess a capacity and a desire for useful employment, seem to represent the newcomers who are constantly being received into heaven, and who, after the necessary training, are incorporated according to their peculiar abilities into the different heavenly societies. However, the nutritive elements contained in the plasma may also represent the novitiate spirits who become a part of heaven.

Accompanied by the angels of the plasma and red corpuscles the newcomers pass along through the societies of the arteries and veins as they go to the societies of the heart and lungs and other heavenly societies for enlightenment and purification, in order that everything in them that produces a want of harmony with one another and with the whole heaven may be removed; and doubtless they receive from these angels on the way much profitable instruction on the conditions and requirements of the heavenly life upon which they are about to enter. A great deal of the noblest animation, instruction, and purification of novitiate spirits, after they have been sufficiently refined and trained by the other preparatory societies, and when they are nearly ready to begin a life of active usefulness in heaven, must be accomplished in the provinces of the heart and lungs; and when their instruction

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in these provinces is finished, they are sent forth from the heart, like purified blood, full of eager desire for any good use they are able to perform, to be distributed throughout the heavens to their respective societies.

The societies of the villi and lacteals, so largely concerned in the body with the absorption of food, are the angels who are always alert and watchful for every variety of good life in new spirits that can be made use of in the heavenly community, and who, aided by their knowledge of the needs and requirements of heaven, accept all individuals in whom they perceive a desire and capacity for useful service. The societies of the lacteals convey these individuals to the societies of the lacteal glands, where their respective capabilities are investigated and determined, and they are then conducted to the societies of the thoracic duct, who possess a general knowledge of the particular societies of heaven where the new spirits are most likely to prove useful. From here, if they need no special disciplining, the newcomers are sent to the angels of the heart and lungs to be brought more fully into the flow of heavenly life, and to be inspired and animated with a purified love of doing good, after which they are speeded on their way to the societies for which they seem best fitted.

But if there is the perfect analogy between the human body and heaven which we are told there

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is,[1] it must be true that all the newcomers do not at once come to the societies to which they interiorly belong, but that they are sometimes admitted to societies where they are unable to render efficient service; for it must frequently happen that individuals have predilections for special lines of work for which they are really ill-fitted, and this they find out best by making the actual experiment. For the further guidance of all newcomers who have not, after a trial, found their distinctive niche in the heavenly economy, there must exist heavenly societies who perform the functions of the lymphatics in the Greatest Man. By such societies, who perceive that the unsuccessful novitiates can be utilized in some other provinces, the newcomers are taken to societies representing the lymphatic glands, who make a careful examination as to the real aptitudes of the new spirits, their investigations being assisted by the want of success of the spirits in the province they have left; and afterward other lymphatic societies, who as a result of this examination know accurately the special capacities of the newcomers, conduct them to the societies of the thoracic duct for exact distribution to the societies which are destined to become their permanent home. The angels of the plasma also pass through the lymphatic societies when returning to the heart for further duties in other

[1] *Heavenly Arcana*, 3630, 3745.

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provinces. The ways of the arteries and veins and lymphatics are doubtless the "various ways and winding paths" by which, we are told, spirits reach their respective societies.[1]

Newly deceased spirits, we are informed, are taken up through other societies than the lacteals of the intestines; for some are taken directly into the societies of the blood-vessels at the mouth, some at the stomach, and some at the intestines, and nearly all, even after admission into heaven through the societies of the alimentary canal, require more or less disciplining and purifying and training, which are represented by the chastenings and clarifyings of the blood and chyle.[2]

Swedenborg gives the will and the understanding as the correspondence of the heart and lungs, and states that the societies of the heart and lungs constitute the celestial and spiritual kingdoms of heaven.[3] But it is evident that this is a very general statement; for the will and the understanding comprise the whole of man's mind, and the celestial and spiritual kingdoms the whole of heaven, and such a correspondence leaves no room whatever for all the other organs of the body and societies of heaven, which, as well as the heart and lungs, represent faculties of the will and understanding.

[1] *Heaven and Hell*, 519.
[2] *Spiritual Diary*, 1021; *Heavenly Arcana*, 5173–5175.
[3] *Heavenly Arcana*, 3887, 3888.

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Swedenborg alludes to the marvellously sweet choral singing of the societies of the lungs, and says that angels from the lungs are present with a man when he sleeps, and give him then an involuntary respiration in place of his voluntary breathing.[1]

He also refers to the gentle circulatory motions or gyrations in the societies of the lymphatics; and he speaks of spirits as belonging to the receptacle of the chyle and the thoracic duct who were desirous of collecting all possible knowledge in regard to the thoughts of others, and then using such knowledge for their own purposes,[2] just as the receptacle and duct in the human body collect knowledge from all sources, and apply it to the various uses of the body.

[1] *Heavenly Arcana*, 3893.
[2] *Idem*, 5180; *Spiritual Diary*, 1127–1137.

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THE DIAPHRAGM

THE diaphragm is a thin, vaulted partition separating the cavity of the thorax from the cavity of the abdomen. Its construction is peculiar in that it consists of muscular and tendinous portions converging for insertion into a large central tendon, which forms the dome of the vault. On its upper surface the diaphragm is connected with the pleura, and its under surface is covered by the peritoneum. Two strong tendinous pillars or crura bind the diaphragm firmly to lumbar vertebræ of the backbone.

The diaphragm is the means by which emphasis is given to the voice; for by virtue of the rapid and vigorous action of its muscles it drives the air forcibly through the windpipe, and so gives emphasis and power to the voice. The diaphragm also co-operates with the ribs and costal muscles in the mechanism of respiration: for by the contraction of its muscles during inspiration, and the consequent depression of its arch, it increases the capacity of the thorax, and thus draws in a larger volume of air; and by the

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relaxation of its muscles during expiration it assists in expelling the air out of the lungs. It is a singular physiological fact that in men the diaphragm takes a larger share in this process, while in women the respiratory act is largely the result of the movement of the ribs. By its connection above with the pleura, and below with the peritoneum, the diaphragm receives directly the animations of the lungs, and imparts their motions to all the viscera of the abdomen, in this way aiding them in the performance of their functions. On account of the extensive influence which the diaphragm exerts, Swedenborg calls it "the most general uniting medium in the whole body." [1]

The diaphragm corresponds to the faculty of being positive and emphatic in statements, and the two strong pillars attaching it to the backbone correspond to the faculty of not receding from assertions.

While the faculty represented by the diaphragm is not of a very high order, and is disposed to dogmatism, it nevertheless possesses a great deal of strength, and if rightly exercised it requires accurate knowledge of the subject talked about, and displays a central power of resistance to all antagonistic wishes and suggestions.

The assistance which the diaphragm renders to respiration and to speech is paralleled by the positiveness which such a faculty gives to the

[1] *Animal Kingdom*, ii., 448.

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thinking, and to the expression of thoughts. The circumstance that diaphragmatic breathing is more pronounced in men than in women indicates that men are more positive and emphatic in their thinking and statements than women. A somewhat similar difference between the sexes is that men possess heavier facial bones than women; and as the bones of the cheeks and jaws correspond to domination, this difference shows that men have a more dominating personality than women.

The entire human body is divisible into three distinct sections, corresponding to the three general degrees of feeling, thought, and knowledge. The bodily division of feeling is represented by the head as containing the brain, for there all the faculties are in their essential and perceptive life, and all inward life is from feeling; this section may be called the degree of perceptive emotionality. The bodily division of thought is represented by the trunk and the arms and legs to the elbows and knees, for here are located the most thoughtful faculties, which, however, lack the perceptive emotionality which the same faculties have in the brain; this section may be styled the degree of concrete intellectuality. The bodily division of knowledge is represented by the extremities below the elbows and knees, for many of the faculties of knowledge are situated in these extremities, and as a rule the

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faculties here possess even less of the emotional element than the section of concrete intellectuality possesses; this section may be termed the degree of abstract intellectuality.

Each of the above three sections is separable into three smaller sections of feeling, thought, and knowledge. In the brain, the cerebellum corresponds to feeling, the hinder cerebrum to thought, and the frontal cerebrum to knowledge. In the body proper, the thorax corresponds to feeling, the abdomen to thought, and the arms and legs to the elbows and knees to knowledge. In the extremities, the lower arms and legs correspond to feeling, the hands and feet to thought, and the fingers and toes to knowledge.

These are the great divisions of the body; but they hold true only in a general way, and do not apply to every detail.

The appropriateness of the position of the diaphragm between the emotional and the thoughtful divisions of the most thoughtful section of the body is therefore apparent; for all thinking whether emotional or intellectual requires more or less positiveness and assertion, in order to have any active existence and to be framed into words by the lips.

In the Greatest Man of our earth, the diaphragm is represented by the Transvaal, which has a similar vaulted shape; and the pillars or crura of the diaphragm are represented by the Orange River Colony.

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In the Greatest Man of heaven, the societies of the diaphragm are the angels who are very emphatic and decided in their affirmations and negations, and who, whenever they have sufficient knowledge on a subject, are fond of peremptorily declaring that a thing is so or not so. These societies are supported in their assertions by the societies of the pillars of the diaphragm, who are firm and unyielding in their character, and unwilling, except for very good reasons, to recede from any assertion which has been made. These societies are of great assistance to the societies of the lungs, enabling them to think strongly and decidedly; and on the other hand the angels of the diaphragm receive through the societies of the pleura and the pericardium the inspirational animations of the angels of the lungs and heart, helping them to see and even to feel clearly whether a thing is so or not, and to make their assertions intelligently. These inspirational animations the angels of the diaphragm impress in turn upon all the visceral societies of the abdomen of heaven, assisting them also to think clearly and in accordance with the flow of heavenly wisdom, and at the same time imparting to their mental operations a positiveness and conviction which they otherwise would not possess.

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THE TRACHEA AND THE PHARYNX

THE trachea, or windpipe, is a wide tube kept permanently open by a series of cartilaginous rings imbedded in its walls. At its lower extremity the trachea divides into two branches, the right and the left bronchus, by which it communicates with the bronchial tubes of the lungs; and at its upper extremity it ends in the short tubular box of the larynx, through the mechanism of which sound is produced. The larynx opens above into the lower part of the pharynx, a muscular and membranous tube completing the air-passage from the mouth and nose to the lungs.

The function of the trachea and its bronchi, in addition to providing a channel for the flow of air between the outward atmosphere and the lungs, is to examine and correct the air which is admitted, and to prevent anything injurious from entering the lungs, and also to assist the lungs in emitting their exhalations into the general atmosphere.

The larynx is the organ of the voice, and its

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function consists in the production of vocal sounds, which are formed by the air breathed out of the trachea putting in vibration the vocal chords stretched across the orifice of the larynx. The larynx, however, produces sound only, the modulation of the voice into articulate speech being effected by the varied positions of the tongue and lips.

The pharynx has a double office, for it serves as an entrance to the alimentary canal as well as to the larynx and trachea. Its chief functions consist in co-operating with the larynx and trachea, transmitting their aërial currents to the mouth to be modulated into definite words by the tongue and lips; and in swallowing the food received from the tongue and soft palate, and thus forcing it into the œsophagus. The movements of the pharynx are not concurrent with those of the larynx and trachea, but follow them and reciprocate with them.

The trachea, the bronchi, and the larynx correspond to the faculty of exercising authority. The trachea corresponds to the consciousness and assertion of authority; the larynx, to the giving of commands; the left bronchus, to watching whether the commands are carried out; and the right bronchus, to chiding if they are not obeyed. The pharynx corresponds to the faculty of not taking commands except from those who have the rightful authority.

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These correspondences are mirrored in the functions of the trachea, larynx, and pharynx: for, on the one hand, the trachea and its bronchi stand as a guard before the lungs, and exercise authority in preventing any hurtful element from entering their delicate tissues; and, on the other hand, they receive the currents of air sent forth from the lungs, and convey them to the larynx to be given vocal utterance if desired, and they lend their authority to these utterances, in order that the interior motions imparted to the breath by the lungs may be readily brought forth into the outward world, and be framed into commands, speech, singing, or other sounds. Hence these organs give authoritative utterance to the inspirational meditations of the lungs, and they also give initial and emotional expression to all the knowledge, thought, and feeling of the mind which are communicated by the voice. The special duty of the larynx is to give commands, yet it works in harmony with the trachea in adapting itself to and expressing all the aërial motions and impulses received from the lungs for vocal utterance. But the trachea and larynx would be powerless to accomplish their purposes unless the pharynx, which completes the passage to the mouth and nose, received their commands, recognized their authority, and gave its ready cooperation; for commands and authority have no force unless they are recognized as valid and

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lawful, and the pharynx is not a mere adjunct of the trachea and larynx, but has separate activities of its own not coincident with theirs, which it can refuse to exercise. As regards its function of assisting in the act of swallowing, the pharynx receives the food, after it has been taken in by the lips, examined by the teeth, tasted by the tongue, and dominated by the palate, and pushes it down without parley into the œsophagus, to be conducted to the stomach and intestines. Hence the pharynx sees to it that the food goes in the appointed direction without reference to any inclination the food may have as to its destination and disposal.

Both the trachea and the larynx are smaller in the female than in the male, and this difference shows that women are less authoritative and less commanding than men.

In the Greatest Man of our earth, the trachea is represented by northern Bechuanaland; the larynx, by Damaraland; the left bronchus, by southern Bechuanaland; the right bronchus, by Great Namaqualand; and the pharynx, by Angola.

In the Greatest Man of heaven, the societies of the trachea, bronchi, and larynx are the angels who stand as a guard before the societies of the lungs, and use their authority to prevent any injurious element from entering these interior societies; and they receive the results of the inspirational thinking of the angels of the lungs,

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and carry them forth to be communicated to the heavens in general. They also add the weight of their authority to the wise thoughts of the angels of the lungs, and utter them as the authoritative teaching of heaven; and they willingly conform themselves to the impulses communicated from the lung societies, so as to give vocal expression to their thoughts and feelings whether in speech or song. When, as is sometimes the case, the whole heaven speaks as one man, many other societies of the palate, mouth, nose, tongue, lips, and teeth take part, in order to give intellectual distinctness and definiteness to the more emotional expressions of the trachea and larynx.

The angels of the trachea and larynx exercise the authority of the heavens, and they must perform many important functions in this capacity with reference both to the angels and spirits of heaven and to the devils of hell.

The societies of the pharynx co-operate in a distinctive way with the angels of the trachea and larynx, recognizing their authority as rightful and valid, and quickly complying with their behests; but when these pharyngeal societies assist in transferring to the societies of the œsophagus the newly arrived spirits, who are the food of heaven, they take no commands from these spirits, and listen to no orders from them as to their disposal, but hurry them along without parley to the

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societies of the œsophagus, to be conducted to places of instruction and purification for the good or to places of separation and rejection for the evil.

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THE THYMUS GLAND AND THE THYROID BODY

THE thymus gland is a soft, lobulated body situated behind the sternum, and overlying the great vessels of the heart covered by the pericardium. It consists of two lobes, prolongations of which are carried upward into the neck, and the lobe reaching farthest up is attached to the corresponding lobe of the thyroid body by a strand of connective tissue. This gland attains its maximum development toward the end of the second year, and then remains almost stationary until the sixth year, after which period it dwindles away until in adult age very little of it is left.

The thyroid body is a highly vascular structure located in the neck. It exhibits three well-marked divisions, which consist of two lateral lobes clasping the upper part of the trachea and extending upward on each side of the larynx, and of a middle portion or isthmus uniting the lobes. It is firmly attached to the viscera on which it lies, and follows all the movements of the larynx. The thyroid body is firmer in substance

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than the thymus gland, and continues throughout life. Its size varies greatly in different individuals; but it is relatively larger in the female and the child than in the adult male, although the isthmus is usually very insignificant in children. Goitre is a chronic enlargement of the thyroid body, and women are more subject than men to this disease.

According to Swedenborg's theory, the function of the thymus gland is to supply the neighboring organs and vessels with an oily secretion, which lubricates their tissues, and ensures their smooth and uniform motion. He states that this gland is continually pouring out its secretions according to the requirements of the heart, lungs, pleuræ, and other surrounding viscera, but in varying quantity proportionate to their activity, a larger quantity being sent forth "when the heart is in an unruly condition, throbbing and palpitating with vehement action, when the lungs, impetuous and boiling, dash against the interposing dyke of the mediastinum, and beat and shake it with the windy tempest shut up in their Æolian bags, and when the trachea, œsophagus, the great artery, and the vena cava are in a similar uneasy state." [1] The thymus gland seems also to act as the great lymphatic gland of early life, in which the colorless corpuscles of the blood are formed or elaborated.

[1] *Animal Kingdom*, ii., 436.

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The function of the thyroid body is unknown; but it is supposed to take some part in the formation of the blood.

The thymus gland corresponds to the love of dependence. In children it is the love of being cared for by their parents, of receiving instruction from them as to what is hurtful and what is useful, and of living in sweet and lowly dependence upon their goodness and bounty. It was this trait of little children that the Lord commended to His disciples when they were striving for pre-eminence, telling them that unless they became as little children they could not enter the kingdom of heaven; for unless they were willing to humble their feeling of personal greatness and self-sufficiency, and live in trustful dependence upon the Lord's goodness and wisdom, they would not be able either to receive or to enjoy the heavenly kingdom.

The faculty of dependence is largest during early childhood; but when the child arrives at the age of reason, and begins to exercise his own mental and volitional powers, he quickly ceases to be so dependent upon his parents and instructors, just as the thymus gland is largest from the second to the sixth year of childhood, and only gradually decreases in size until puberty, when it undergoes a rapid degeneration. In adult age most persons have children or other individuals dependent upon them, and they take

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care of themselves, and form their own ideas, instead of depending upon their parents for support and instruction; and hence in that age very little of this gland is left. Some trace of it, however, always remains; for we are always more or less dependent upon the labors of others, and spiritually we are always dependent upon the Lord for His goodness, His bounty, and His gracious providence.

The function of the thymus gland in furnishing an oily secretion for the harmonious and uniform working of the viscera of the thorax is paralleled by the operation of this faculty in the mind; for the faculty of dependence itself is always in a tranquil and receptive state, and it pours out its quieting influence like an oil upon the faculty of inspiration and other faculties which need a sense of lowliness and dependence for the even and peaceful performance of their functions.

The circumstance that the thymus serves as the great lymphatic gland of early life, and as a laboratory for the manufacture of the white corpuscles of the blood, perhaps finds its correspondence in the fact that children depend very largely upon their elders for suggestion and advice as to what to do or how to be actively employed; for the white corpuscles of the blood, as was shown above, correspond to the love of active employment.

In hibernating animals the thymus gland ex-

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ists throughout life, and becomes greatly enlarged and laden with fat as the period of hibernation approaches; for the animal then relapses into a state of complete inactivity, and becomes entirely dependent, for the maintenance of its life, upon the supplies of food which have already been stored up in its tissues.

The thyroid body is the antithesis of the thymus gland, and corresponds to the love of personal importance. Its two lateral lobes correspond to the feeling and assertion of one's importance, and the uniting isthmus corresponds to the love of demonstrating to others one's importance. The strand of tissue connecting the thymus gland with the thyroid body corresponds to the thought that while one is of no very great importance, still he is of some importance.

Why the faculty of personal importance should be larger in women and children than in men is not clear; but it is probably because men, by their more active life, come in contact with a wider range of humanity than women and children, whose circle of acquaintanceship is comparatively limited, and hence men are more likely to meet others of equal and even superior ability to their own, and this experience tends to reduce the feeling of their own greatness and importance. Moreover, most men, unlike the majority of women and children, have to work under an employer, and service in a subordinate position

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is not conducive to the development of self-importance. While the lobes of this gland are larger in children than in men, the isthmus is usually very insignificant, because children as a rule have very little means of showing an importance which they do not possess. The monstrous disease of goitre corresponds to an exaggerated sense of one's own importance; and this affliction, likewise, claims more victims among women than among men.

The thyroid body is firmly attached to the larynx and follows all its movements, because the love of personal importance and the love of giving commands are closely associated in their work; for it requires some feeling of importance to give commands to others.

The removal of the thyroid body causes death; and consequently it must perform some important service in the body, which is no doubt accomplished by its internal secretion. It is probable that the secretion which the thyroid sends to the blood adds correspondentially to the blood a sense of the importance of its work: and if this sense is taken away completely by the removal of the thyroid body, the ability to work at all ceases, and the man or animal dies; for no one can work long at any task, or even continue to live, unless he feels that he and what he does have at least some importance in the world.

In the Greatest Man of heaven, the societies of

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the thymus gland and the thyroid body exert an opposite influence. The angels of the thymus gland bring to others a sense of lowliness and of dependence on the Lord which makes them gentler, more trustful, and more receptive, and which anoints their hearts with a quietness and sweet joy that prepares them for harmonious work, and stills the overwrought perturbations of self-activity. The societies of the connective strand between the thymus and the thyroid are the angels who acknowledge that no single person is of very great importance amid the myriads of created human beings, but who yet recognize that every one, no matter how lowly, is of some importance as a component part of the great whole. The societies of the thyroid body are the more active but less gentle angels, who are strenuous in the assertion of their importance, and who love to manifest their importance to others whenever occasion for it arises. Hence they are well adapted to co-operate with the angels of the trachea and larynx, who exercise authority and give commands; and they no doubt have the function of communicating to the societies of the blood a needful sense of the great importance and usefulness of the inspired teaching which these societies bring to all the heavens, and which is the vital fountain of all the active energy of the angels.

Swedenborg makes no reference to the angels of the thyroid body; but he gives the following

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description of those who constitute the province of the thymus gland:

"There are certain upright spirits who think without meditation, and hence utter quickly and as it were without premeditation what occurs to their thought. They have interior perception, which is not made so visible by meditations and thoughts as with others; for in the course of life they have been instructed as of themselves about the goodness of things, and not so much about their truth. I have been informed that such spirits belong to the province of the thymus gland; for the thymus is a gland which is serviceable especially to infants, and in that age is soft. With such spirits, also, there remains a soft infantile principle, into which flows the perception of good, from which perception truth shines forth in a general way. These spirits can be in large groups, and yet not be disorganized, as is also the case with that gland." [1]

The reception of instruction, the lack of deep thought, and the free, artless utterance here referred to might well be expected of those who depend so much upon others, and who lead a life of simple joys, undarkened by the shadow of care.

[1] *Heavenly Arcana*, 5172.

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THE EAR

THE ear is a very complicated structure, being composed of several distinct portions arranged in a series from the outer ear, which merely receives the vibrations of sound, to the inner auditory cellular apparatus, which perceives the vibrations, and transmits them through appropriate nerves to the brain. It will therefore be necessary to describe with some detail the different parts of the organ of hearing.

The ear is divided into three general sections,—the external ear, the middle ear, and the internal ear.

The external ear consists of the visible portion of the ear, which is largely made up of cartilage, and the external auditory canal, which leads into the bone of the head as far as the middle ear, from which it is separated by the tympanic membrane.

The middle ear, or tympanum, is a small air chamber in the temporal bone, intervening between the external and the internal ear. Within its cavity are the tympanic ossicles,—three small bones, called the malleus, the incus, and the

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stapes, which form a chain across the middle ear, one end being attached to the tympanic membrane, and the other end to the membrane of the fenestra ovalis.

The middle ear has indirect communication with the external air by means of the Eustachian tube, which joins it with the pharynx; and its mucous membrane covers groups of cavities in the mastoid process of the temporal bone, which are filled with air, and which are known as the mastoid air-cells.

The internal ear is composed of the bony labyrinth and the membranous labyrinth, and is filled with fluid instead of air.

The bony labyrinth is an intricately shaped bone, divided into three parts,—the cochlea, the vestibule, and the three semicircular canals. The cochlea is a round tube wound upon itself in a narrowing spiral resembling a snail's shell, and its cavity is partially divided into two passages by the spiral lamina, a thin shelf of bone which curls round the central pillar of the cochlea like the thread of a screw. The vestibule is the middle part of the bony labyrinth, and has two small openings or windows, across which are stretched the membranes of the fenestra ovalis and the fenestra rotunda, affording communication between the internal and the middle ear. The three semicircular canals lie nearly at right angles to one another in the three directions of space.

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The membranous labyrinth lies within the bony labyrinth, and it is still more intricately fashioned. It consists of the cochlea, a triangular tube attached to the spiral lamina of the bony labyrinth, and following its windings; the saccule and utricle, situated in the vestibule of the bony labyrinth, and connected with each other by membranous canals; and a series of semicircular canals similar to those of the bony labyrinth, and called the superior, the posterior, and the external semicircular canals.

A branch of the auditory nerve communicating with the cerebrum is distributed to the cochlea, and another branch connecting with the cerebellum is supplied to the saccule, the utricle, and the semicircular canals.

All along the inner surface of the cochlea of the membranous labyrinth there extends a minute structure known as the organ of Corti.. It consists in part of several thousands of tiny pillars of diminishing length arranged in two rows. These are the rods of Corti, and they are lined on both sides by peculiar epithelial cells furnished with hairs. Within the saccule, utricle, and semicircular canals of the membranous labyrinth are also ridges and patches of epithelial cells provided with hairs, and projecting into the cavity of the labyrinth. It is principally these cells which, receiving the impulsions of the fluid in the internal ear caused by the vibrations of the

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fenestræ membranes, give rise to sensations of sound.

The general function of the ear is to receive, discern, and discriminate sounds.

The external ear merely receives sonorous vibrations, for which purpose its irregular elevations and depressions are well adapted, and conveys them to the external auditory canal, which collects the vibrations, and communicates them in an accurate summary to the tympanic membrane. The tympanic membrane takes up the sonorous undulations, and transmits them through the vibrations of its own substance to the air in the chamber of the middle ear, and to the tympanic ossicles.

These undulations of sound may be communicated to the fluid of the internal ear, either by the vibrations of the air in the middle ear acting upon the two fenestræ membranes, or by the vibrations of the chain of tympanic ossicles affecting the membrane of the fenestra ovalis.

The function of the chain of ossicles is to receive the impulsions communicated to it at one end by the tympanic membrane, and, either by the vibrations of its particles or by the oscillations of the several bones, to transmit these impulsions to the membrane of the fenestra ovalis. Hence it provides a medium through which sounds can pass in regular order and sequence, since only one set of sounds can be transmitted by it at the

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same time. But these ossicles are not essential to hearing; for it has been demonstrated that sounds are transmitted very freely through the two fenestræ membranes simply by the vibrations of the air within the chamber of the middle ear, and hearing continues to exist in cases of disease causing rigidity or loss of the ossicles. The tympanic ossicles are furnished with two muscles, which tighten the two membranes to which they are attached. The contraction of the tensor tympani muscle makes the tympanic membrane more sensitive to higher notes and less sensitive to lower ones, and it also serves to lessen the vibrations of the membrane in the case of too powerful sounds.

The function of the Eustachian tube is to carry off violent vibrations of air which might injure the ear, and to equalize the pressure of air on both sides of the tympanic membrane, and thus to preserve the clearness of the hearing. The mastoid air-cells probably exercise a neutralizing effect upon intense vibrations of air.

Although the labyrinths are not essential to hearing, they seem to have the function of perceiving in some way the sonorous undulations which are imparted through the fenestræ to the fluids within their cavities; but it is evident that the bony labyrinth by reason of its harder structure must be less receptive of these undulations than the softer membranous labyrinth.

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The function of the saccule and utricle of the membranous labyrinth, in addition to directing some bodily movements, is to give an idea of the position of the resting body in space; and the function of its semicircular canals is to enable the body to maintain its equilibrium. When all three of the semicircular canals are injured in an animal, it is thrown into continuous and varied movements, and loses all power of balancing itself in a normal way; and when these canals are impaired in a man by disease, the patient feels extreme dizziness, and experiences an inability to balance the body. Hence these canals are probably the means of directing the movements of the head in all planes of space, and, in conjunction with the auditory cells, act as sense-organs for the guidance of the bodily movements.

The numerous rods of Corti are like the strings of a piano, and strike particular notes in accordance with the sonorous vibrations they receive, and their distinctive function is to render sensible to the brain the various musical notes and tones. They are the only part of the ear capable of appreciating the exquisite harmony of a Beethoven symphony.

The function of the epithelial auditory cells of the organ of Corti, and also of the saccule, utricle, and semicircular canals, is probably to perceive sounds distinctly and exactly rather than to determine their musical qualities. Thus they

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perceive mere sounds, and not harmony like the rods of Corti; but the capacity to perceive sounds distinctly and the capacity to distinguish harmony must be closely associated, and in fact the rods of Corti form part of the organ of Corti and lie within it.[1]

The foregoing is an incomplete description of the ear and its functions, but it gives sufficient data to establish the correspondences of the principal parts of the ear.

The essential parts of the organ of hearing are the external ear with its canal, the membranes of the tympanum and fenestræ with their appropriate fluids, and the epithelial auditory cells. Without the external ear and its canal, there would be nothing to receive sonorous vibrations and to convey them to the chamber of the middle ear; without the membranes, sounds could not pass through, but would be obstructed and deadened by bony walls; and without the auditory cells no capacity would exist to communicate sonorous

[1] It is possible that the myriads of fibres composing the basilar membrane, which underlies the organ of Corti, have the function of distinguishing the nature of sounds that are heard, especially when the agent producing them is out of sight; for instance, whether the sound heard is a bird's song, the trotting of a horse, the rustling of a tree, the voice of a human being, the barking of a dog, and so on. The cells of Hensen in the organ of Corti may have the function of listening to distant or indistinct sounds, and the cells of Claudius may have the function of perceiving the rhythmic or metrical flow of sounds whether in music or poetry.

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sensations to the brain. All the other parts of the ear are supplemental, and constitute no necessary portion of the organ of hearing; for hearing could continue with an entirely different construction of the ear, and with all the other parts left out, but it could not continue if any of the above-named essential parts were absent. Hence these essential parts of the ear correspond to the faculty of hearing, which is the function of the ear in general, while the other portions correspond to related but different faculties.

The external ear corresponds to an outward hearing, which listens to sounds and words, but does not possess much comprehension of their meaning, especially if they have any internal meaning. This correspondence is evidenced by the function of the external ear; for it acts merely as a funnel to catch sonorous undulations, and carries them without modification to the external auditory canal. The fleshy lobe at the bottom of the external ear corresponds to a good-natured listening.

It was commanded, in order to sanctify Aaron and his sons for the priesthood, that a ram should be sacrificed as a burnt-offering, and its blood be put on the tip of their right ear, and on the thumb of their right hand, and on the great toe of their right foot [1]; and these rites probably signified that, as a preparatory basis for preach-

[1] Exodus xxix., 20.

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ing the truth of good life, ministers should listen pleasantly to the members of their flock, and should be willing to learn about their inward and outward states of mind.

The external auditory canal corresponds to a kind of listening which gathers the particulars of what is heard, and then communicates them to others in an accurate summary; for this canal is expanded at its outer end, and it takes up the vibrations of sound received from all parts of the external ear, and then transmits them to the tympanic membrane through a narrow cartilaginous and bony space.

The tympanic membrane corresponds to a listening which puts its own construction on what it hears. Its twofold function of hearing and interpreting is represented by the two sets of fibres of which the membrane proper is composed, one set being arranged radially for listening, and the other near the circumference being arranged circularly for thinking. Besides, the membrane does not receive the sonorous undulations on its outer surface merely, and superficially pass them along, like the external ear and the external auditory canal; but it communicates them through itself by the vibrations of its own substance, and thus possesses some power of modifying them or putting its own construction on them.

The tympanic ossicles and their muscles cor-

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respond to the faculty of discerning whether or not the statements presented are admissible as evidence in support of a question or contention. Such a correspondence appears in their function; for these ossicles are placed in a chain from the external ear to the internal ear, and readily perceive any want of sequence in the sounds presented, and hence correspondentially they are quick to detect any lack of sequence and coherence in the statements that are given as evidence of the truth of a matter.

The tensor tympani muscle, which by its contraction makes the tympanic membrane more tense and more responsive to high-pitched sounds, also tightens the ligaments of the ossicles, and renders them better transmitters of sonorous vibrations. The primary use of this muscle is to arrest and rivet the attention on the intellectual aspects of statements, for low notes are more expressive of emotion and high notes of intellectuality; and as the contraction of the tensor tympani renders the ossicles better conductors of sonorous vibrations, it seems likely that the intensity of the vibrations communicated to the internal ear by these ossicles depends somewhat upon the exercise of the faculty to which they correspond.

The mastoid air-cells seem to correspond to the refusal to recognize a person as master, and to follow his directions. Such refusal, like the

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action of the air-cells in neutralizing the force of violent vibrations of the air in the middle ear, would tend to nullify the effect of strenuous commands upon the mind.

The Eustachian tube corresponds to the faculty of perceiving whether or not the commands heard should be obeyed. The tube communicates with the pharynx, which, as was stated above, corresponds to the faculty of not obeying commands unless they are given by those who have the rightful authority; and the Eustachian tube is the part of this faculty which perceives whether the commands are given by the person who has the rightful authority, and whether they should be obeyed. Such perception performs on the spiritual plane of mind the same functions that this tube performs on the natural plane of matter; for it holds open the connection between the hearing of commands and the doing of them or the refusal to do them, and it enables the mind to maintain a normal and clear comprehension as to where its duty lies with reference to commands.

The yielding to commands is like the carrying off of the violent vibrations of air, which is one of the functions of the Eustachian tube. When commands are not yielded to, it is probable that the tube does not carry off the vibrations, but that their effect is neutralized by the action of the mastoid air-cells.

Swedenborg tells us that the speech of the

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people of the Most Ancient Church was communicated to the ear not by an external way through the vibrations of articulate sound striking upon the tympanic membrane, and being transmitted to the internal ear by the chain of ossicles, but by an internal way through the Eustachian tube; and that thus they were able to express the feelings of the mind and the ideas of thought more fully than could possibly be done by articulate sounds and sonorous words.[1] This method of speech by internal and tacit respiration may have been partly due to the fact that the faculty of intellectually examining statements to ascertain whether or not they constitute a real chain of evidence could not have been developed to any great extent in the mind of the infancy of the race; whereas the faculty of wise perception as to whose commands should be obeyed must have been a prominent trait in the character of this primitive people, whose very heavenly life depended upon their wise obedience to the commands of the Lord.

The membranes of the fenestra ovalis and the fenestra rotunda correspond, respectively, to an intellectually interested listening and to an emotional or a sympathetic listening. These faculties form as it were fenestræ, or windows, of communication: for unless we have some intellectual or emotional interest in a subject, we do not care to listen

[1] *Heavenly Arcana*, 1118.

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about it; and even if we do passively listen, it is in an external way, and the words do not penetrate very far into the mind.

The bony labyrinth corresponds to the faculty of common sense. This is a hard, incisive faculty, which does not enter into all the details of a question, but views it in a general way according to previous experience. Although such a faculty listens to words and arguments, it quickly grasps their inward pith, and, like the bony labyrinth, does not allow itself to be much impressed by sophistries and mere words. Hence it is well represented by the bony labyrinth, which does not follow all the multitudinous folds of the membranous labyrinth, and the spiral lamina of which projects inward sharply and incisively. The cochlea of the bony labyrinth corresponds to common sense as to feeling; its vestibule, to common sense as to thought and knowledge; and its semicircular canals, to common sense as to expressions.

The membranous labyrinth corresponds to the faculty of comparison. Unlike the faculty represented by the bony labyrinth, the faculty of comparison is fond of entering into the particulars of a matter, and it balances all the considerations for and against, and then decides in favor of the side which has the preponderance of arguments. The cochlea of this labyrinth corresponds to comparison founded on feeling; the saccule, to

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comparison founded on thought; the saccus endolymphaticus between the saccule and the utricle, to comparison of what is heard with what was known before; and the utricle, to comparison founded on knowledge. The superior semicircular canal corresponds to precise definition, the posterior semicircular canal corresponds to ascertaining by mental comparison whether or not the words used exactly express the thought, and the external semicircular canal corresponds to more or less eloquent expression by means of a swift comparison between words and the ideas in the mind, and a selection of the most appropriate language.

A great many of our conclusions about sounds are founded on comparison. We estimate the distance of sounds by comparing their impressions with what we have already learned of the distance of sounds of similar intensity; and hence we are often mistaken about the distance when the sounds are indistinct, and when the ear is misled by the simulations of ventriloquism. We also determine the direction of sounds by ascertaining through comparison upon which ear they fall more distinctly.

The saccule and utricle enable us to judge of the position of the resting body in space, because we judge of our position with reference to others by comparing their ideas with our own. The semicircular canals assist the head and body to

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maintain their equilibrium, and to balance themselves in a normal way; for the faculty of defining and giving accurate expression to our ideas on a subject helps us to know just where we stand and just what we think, and if the ability of clearly defining and exactly and appropriately expressing our ideas is lost, we become unable to fix our position definitely on any question either to ourselves or to others. Moreover, it is the function of this faculty to balance words and phrases in the mind so as to determine their relative fitness, and the kinds of comparison represented by the saccule and utricle perform the same function with reference to opposing arguments; and the mental capacity to balance arguments and expressions is no doubt the source of the ability of these organs to balance the head and the body.

The rods of Corti correspond to the faculty of perceiving harmony or tune, a correspondence which is amply corroborated by their musical function. They are the inmost of all the parts of the ear; for the love of perceiving the harmony of sounds is the most interior of the different kinds of hearing.

The epithelial auditory cells in the cochlea, the saccule, the utricle, and the semicircular canals correspond to the faculty of listening intently, acutely, and in a purely intellectual way; for these cells perceive sounds distinctly, and convey

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their accurate impressions through appropriate nerves to the brain.

Although the cochlea represents the emotional part of the faculty of comparison, as is shown by the fact that it is fully developed only in mammals, which are types of the emotions, the auditory cells within the cochlea are connected by a branch of the auditory nerve with the cerebrum; whereas the auditory cells within the saccule, utricle, and semicircular canals, which represent the intellectual part of the faculty of comparison, are by another branch of the auditory nerve joined to the cerebellum. The significance of this arrangement may be that the cerebral auditory activity enables us to perceive and distinguish in an intellectual way the sounds which affect our emotional natures, while the cerebellar auditory activity enables us to perceive sounds for the guidance of our movements and actions; for the cerebrum is the intellectual organ of the brain, and the cerebellum is its emotional organ, which assists in co-ordinating the bodily movements, and which creates the necessary stimulus for action.

Some of the above correspondences are confirmed by Swedenborg, who says that the ear corresponds to hearing and obedience, that they who attend but little to the meaning of what is said relate to the cartilaginous and bony parts of the external ear, and that they who belong to the

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interiors of the ear are logicians and metaphysicians who have the sight of inner hearing, and obey what its spirit there dictates, and express these dictates fittingly.[1] The fact that the membranous labyrinth corresponds to the faculty of comparison explains why Aristotle, who invented many abstruse philosophical terms to define his ideas, belongs to the province of the ear;[2] for Aristotle was a native of Greece, and Greece corresponds to the faculty of comparison.[3]

In the Greatest Man of our earth, the external ear is represented by the Lesser Antilles islands of the West Indies, and its lobule is represented by the island of Trinidad. The fierce volcanoes in this group of islands, however, cannot represent the passiveness of the external ear, but they probably represent a part of the temporal bone, which is so closely associated with the ear.

The external auditory canal is represented by the island of Cuba, and the tympanic membrane by the island of Hayti.

The tympanic ossicles and their muscles are represented by Denmark, Seeland constituting the malleus and Jutland the stapes.

The membrane of the fenestra ovalis is represented by the island of Porto Rico, and the

[1] *Heavenly Arcana*, 2072, 4656, 4658, 9397; *Apocalypse Explained*, 14.

[2] *Idem*, 4658.

[3] *Psychology of the Nations*, p. 128.

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membrane of the fenestra rotunda by the island of Jamaica.

The bony labyrinth is represented by the Netherlands, and the membranous labyrinth is represented by Greece and its islands.

The rods of Corti are represented by the Santa Cruz islands, and the epithelial auditory cells are represented by the Bahama islands.

In the Greatest Man of heaven, the societies of the ear are arranged in regular order, from the outer societies who passively receive the impressions of sound, to the inner societies who distinctly perceive the sounds and transmit their sensations to the societies of the brain.

The societies of the external ear and its canal love to listen to words and sounds, and to communicate them in a summary way to others. Their nature is external and passive; and although they like to take in and to communicate what they hear, they attend but little to any inward meanings, but leave these for the attention of the more interior societies of the ear. The societies of the tympanic membrane are more interior than those of the external ear; for besides listening to others, they put their own construction on what is said.

The societies of the tympanic ossicles love to decide judicially in regard to statements heard, and to determine whether such statements cohere in a series so as to constitute a chain of evidence,

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and whether they have any real intrinsic bearing on the question or contention in support of which they are adduced. These angels will not permit themselves to be deterred from their purpose by emphatic assertion or strong sentimentality, but put aside all manifestations of mere feeling that are likely to influence their intellectual perceptions; and in this characteristic they resemble the tensor tympani muscle, which tightens the membrane and so dulls the hearing when too intense sounds strike the ear.

The societies of the Eustachian tube and the mastoid air-cells assist each other in their activities; for it is the wisdom of the angels of the Eustachian tube to determine whether the commands heard should be obeyed or not, and if they are not to be obeyed, the angels of the mastoid air-cells lend their support to antagonize the command and to render it of no effect. The societies of the Eustachian tube reach down to those of the pharynx, and give them wise counsel for the guidance of their actions with reference to the commands of others.

The societies of the fenestra ovalis and fenestra rotunda serve to keep open, by their interested intellectual and sympathetic hearing, the ways of communication to the inner provinces of the ear, where the inward significance of sounds and statements is perceived.

The societies of the bony labyrinth always

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exercise their common sense about the statements they hear; and their incisive intellectuality and their habit of viewing things in a general way from the light of experience enable them to grasp quickly the real substance and value of an argument, and make it very difficult for others to mislead them by specious words or rhetoric.

The societies of the membranous labyrinth love to hear new ideas, to compare what they hear with what they knew before, to deliberate on the pros and cons of all questions, and to decide them on their merits irrespective of previous experience. They are also fond of comparing different things, and of thus bringing out more clearly the distinctive quality of each. Some of these societies, answering to the semicircular canals, delight in giving precise definition and accurate expression to their ideas, especially if their productions are of a philosophical nature; and others love to clothe their thoughts and feelings in appropriate and glowing language. The angels of the membranous labyrinth are doubtless inclined at times to elaborate too finely spun arguments, and it is the duty of the angels of the bony labyrinth to perceive and to point out the insubstantiality and fallacious nature of such arguments; but, on the other hand, the angels of the bony labyrinth are sometimes apt to be too external in their conclusions. and too much in-

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fluenced by previous experience, and it then becomes the task of the angels of the membranous labyrinth to show that they have not dealt with the question at issue on its true merits.

The societies of the epithelial auditory cells listen intellectually, intently, and acutely to all the sounds that reach them, and then accurately communicate their impressions, through the societies of the auditory nerve, for the information of the provinces of the brain with which they are connected. In the centre of these auditory societies are the societies of the rods of Corti, who possess a keen sense of the musical relationship of sounds, and who love to perceive all the tuneful melodies that come to the ears of heaven. They are the heavenly musicians; they love abstract harmony, and strive to make their musical compositions beautifully melodious and free from all dissonant sounds.

A great variety of sounds from many quarters must come to the societies of the ears of heaven. They hear the prayers and supplications of good men upon earth [1]; they hear the authoritative teachings which are inspired by the angels of the lungs, and also the heavenly chorals sung by these angels; they hear the many words and statements which are uttered by the societies of the organs of speech, and which are expressive of the

[1] *Heavenly Arcana*, 9202.

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states of mind of the whole heaven; and they perhaps first hear the oral words of inspiration and revelation spoken at times by the Lord to the angels of the heart of the Greatest Man.

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THE EYE

THE system of the eye falls into three general divisions, consisting of the eyelids, the lachrymal apparatus, and the eyeball.

The eyelids with their lashes form a curtain for the eye, protecting it from extraneous substances, and shutting out the light when desired.

The lachrymal apparatus extends from the orbit of the eye to the inferior turbinate bone of the nose. The lachrymal gland, which is lodged in the upper and outer part of the orbital cavity, secretes tears, and its secretion issues upon the eye through several ducts in the upper eyelids. From the surface of the eye the tears are drained into canals, which converge to form the lachrymal sac, situated on the lachrymal bone, and through this sac and the nasal duct, which is a continuation of it, they are finally conveyed into the nasal cavity. Closely connected with the lachrymal system is the conjunctiva, a delicate membrane which lines the inner surface of the eyelids and the outer surface of the eye, and thus conjoins them. The function of the lachrymal gland, under

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ordinary circumstances, is to keep the conjunctiva moist and clear by its secretions; but under the influence of painful emotions more fluid accumulates than can be conveyed away by the canals, and overflows the eyes in the form of tears.

The structures within the eyeball are encased in three coats; the outermost is the sclerotic, the middle is the choroid, and the innermost is the retina. The sclerotic is a tough, firm case of fibrous tissue, the greater part of which is white and opaque, but in front the coat becomes transparent and is called the cornea. The choroid is highly vascular in structure, and contains numerous pigment cells. The retina covers only the hinder two-thirds of the eyeball; in it lie the rods and cones which constitute the essential part of the organ of vision, the functions of the accessory portions of the eye being mainly to bring the rays of light to a focus upon the rods and cones. The casings of the eye are kept in shape by the aqueous and vitreous humors, with which they are filled. The aqueous humor is scarcely more than water holding a few organic and saline substances in solution, and it occupies a small chamber in the forward part of the eyeball; while the vitreous humor is a transparent, jelly-like substance, and takes up a large space in the hinder part of the eye. The two humors are separated from each other by the transparent crystalline lens, which is denser than either of the

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humors, and capable of refracting light more strongly. At the sides of the crystalline lens is the ciliary muscle, which by its action in relation to the lens adapts the eye for seeing objects at various distances. The iris is situated in front of the lens and in the midst of the aqueous humor. It consists chiefly of circular and radiating muscular fibres, which are arranged about a central aperture,—the pupil. By the operation of these fibres the size of the pupil can be diminished or increased, and consequently less or more light admitted into the eye. Pigment cells are scattered throughout the iris and the eyeball, and upon the arrangement of these cells in the iris depends the distinctive color of the eyes in different individuals.

The ear is constructed to receive the vibrations of the air, which as the third atmosphere corresponds to spiritual knowledge and conduct; but the eye is fitted to respond to the activities of a higher atmosphere, the ether, which as the middle atmosphere corresponds to spiritual thought. Hence it is that Swedenborg says that "the sense of sight corresponds to the affection for understanding and being wise, because the sight of the body altogether corresponds to the sight of its spirit, thus to the understanding." [1]

The eyelids in relation to the eye itself hold a position similar to that which the external ear

[1] *Heavenly Arcana*, 4405.

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has with reference to the internal ear, for the eyelids guard the entrance to the eye, and form an outward covering for it. The eyelids correspond to the faculty of scrutinizing objects outwardly in order to ascertain what they are. Such a faculty is well adapted to become an outward and a protective covering for the more internal visual faculty of viewing objects and thoughts to determine their intrinsic nature, so far as the eyesight and the mental sight can discern it. The lashes of the eyelids correspond to expressions in regard to the outward nature of objects. Because of the correspondential relationship between the eyes and the eyelids, they are mentioned together in the Bible where the Psalmist says of the Lord:

"His eyes behold, his eyelids try, the children of men."[1]

The Lord's eyelids try the children of men, because He accurately sees and truly designates the outward qualities of those whom He beholds; and men are put to the test by the Divine judgment thus expressed as to their real outward natures.

The entire lachrymal apparatus is connected with the formation and flow of tears; and the shedding of tears, we are told, corresponds to grief of mind.[2] The lachrymal gland, which secretes the tears, corresponds to sad perceptions. The con-

[1] Psalms xi., 4. [2] *Apocalypse Explained*, 484.

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junctiva, which lines the eyelids and the eye, and which is moistened by the tearful secretions, corresponds to the faculty of seeing things from a sad point of view. The lachrymal sac is situated on the lachrymal bone, which, as was stated above,[1] corresponds to a sorrowful state of mind caused by the contemplation of the sad things of human life; and as this sac collects the tears from the eyes, it evidently corresponds to the knowledge of the sad things of life. By the nasal duct, which opens below the inferior turbinate bone, the tears are conveyed to the inferior meatus of the nose, where they perhaps give rise to psychological perceptions of sorrowful states of mind in others; for the inferior turbinate bone corresponds to the perception and knowledge of interior or psychological states of mind. The function of tears is to keep the eye moist and clear; and in line with this function it is true that an individual requires a capacity for grief, and even some personal experience of it, to enable him to appreciate and to see clearly the sad and pathetic circumstances with which human life is crowded. Such a capacity is also requisite for perceiving adequately the range of mournful emotions in the souls of others. Ordinarily the secretion of the lachrymal gland just suffices to moisten the eye and keep it clear, for a tinge of sadness is sufficient to make the mind fresh and clear in its

[1] Page 23.

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vision of the world of human affairs; but when tears form rapidly and overflow the eyes, it is an outward sign of deep sorrow and grief of mind. Tears are sometimes shed when the mind is strongly moved by experiencing or witnessing great and unexpected joy, and the tears in these cases seem to arise from the pathos of the sudden transformation from grief and despair to radiant joy.

Although all the parts of the eye combine to make a harmonious and efficient whole, the three coats, the ciliary muscle and processes, the aqueous humor, and the iris constitute, correspondentially considered, the eye proper; while the crystalline lens, the vitreous humor, and the pigment cells represent qualities of mind which really belong to other faculties. The eye corresponds to the faculty of seeing things in the light of the Divine truth; for the sun represents the Lord, and its light the Divine truth.

The retina corresponds to seeing things in an emotional and a perceptive way; the choroid, to seeing them in a thoughtful way; and the sclerotic, to seeing them in a cognizant way. Hence the transparent cornea, as a part of the sclerotic, corresponds to clearness of cognizant vision.

The fluidity of the aqueous humor shows that it corresponds to the reception and knowledge of literal visual images. The crystalline lens, which has the function of receiving distinctly the light

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reflected from objects, corresponds to the faculty of taking distinct note of the outward characteristics of things. The correspondence of the crystalline lens differs from that of the eyelids, in that the lens does not, like the eyelids, seek to ascertain by accurate scrutiny the outward nature of the object viewed, but endeavors to take distinct note of all the external facts in regard to the object of vision. The greater solidity of the vitreous humor as compared with the aqueous humor indicates that it is more formulative in its nature, and strives for something besides mere literal images; it seems to correspond to the faculty of receiving distinct images from objects in order to form a mental idea of their appearance.

The ciliary muscle and processes correspond to the faculty of seeing things with reference to their confirmation of preconceived theories. As the ciliary muscle adapts the eye for seeing objects at various distances, so such a faculty is able to adjust the mind's vision and to bring its scrutiny to bear upon facts near or remote, familiar or unfamiliar; for all facts can be viewed with reference to their confirmation or non-confirmation of a given theory. It is doubtless due to this correspondential capacity of the eye to see confirmations of its views in all the phenomena of life and nature that the Lord declares:

"The lamp of the body is the eye. If therefore thine eye be single, thy whole body will be full of light;

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but if thine eye be evil, thy whole body will be full of darkness. If therefore the light that is in thee be darkness, how great is that darkness!" [1]

For if the single desire of the mental vision is to see things as they really are, the whole mind will be full of light; but if the sight is adjusted so as to distort all facts into confirmations of false theories, what ought to be a source of light becomes a source of accumulating darkness.

The circular fibres of the iris correspond to the faculty of giving personal supervision, and its radial fibres correspond to the faculty of giving personal inspection. The contraction of the radial fibres enlarges the pupil and admits more light into the eye, for the faculty of merely inspecting what has been done does not require any great concentration of the mind, and takes only observant views of objects; but the contraction of the circular fibres diminishes the size of the pupil, for the personal oversight and supervision of tasks needs a concentration of the mind on each particular thing to be performed. It is perhaps in keeping with this distinction that the pupil is dilated when the eye is accommodated for near objects, and hence for close inspection; but is constricted when the eye is adjusted for distant objects, and hence for general supervision. The pigment cells in the iris, upon the arrangement

[1] Matthew vi., 22.

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of which the color of the eye depends, seem to correspond to the individual standpoint in viewing things. The color of eyes differs just as the standpoints of individuals differ. The usual colors of the eyes are gray, blue, and brown. Gray is composed of white and black; and therefore gray eyes correspond to an obscure, general point of view, because black corresponds to natural obscurity, and white to general truth without discrimination into component parts, for white includes all colors. Blue eyes correspond to an intellectually thoughtful point of view, for blue is the color of intellectual thoughtfulness. Brown is made up of red, yellow, and blue; and brown eyes therefore correspond to a point of view that partakes of the emotional feeling of red, the emotional activity of yellow, and the intellectual thoughtfulness of blue. In albinos the pigment is entirely absent from the iris; and this fact shows that they do not view objects from any distinctive standpoint, but only in a general, undiscriminating way. The same generalness of perception and expression is indicated by their white skin and white hair.

Although physiologists have not yet determined where the perception of color is located in the eye, it is most likely that this perception resides in the pigment cells scattered through the eye's coats. These cells, therefore, may not unreasonably be regarded as corresponding to the perception of color.

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The power of the eye to see things as they really are in the light of the Divine truth is well illustrated in the following quotation:

"Among the wonderful things which exist in the other life is also this fact, that when the angels of heaven look into evil spirits, the spirits have an appearance entirely different from that when seen among themselves. When the evil spirits and genii are among themselves and in their fatuous light, which, as was said, is like that from a coal fire, they appear to themselves in a human form, and even, in their phantasies, not without beauty. But when they are looked into by the angels of heaven, that light is instantly dispelled, and they appear with an entirely different countenance, each according to his character. Some appear dusky and black like devils, some with ghastly faces like corpses, some almost without any face, and in place of it something hairy, some like interlocking rows of teeth, some like skeletons; and, what is more wonderful, some appear like monsters, the deceitful like serpents, and the very deceitful like vipers, and others in other ways. But as soon as the angels remove their sight from them, they appear in their previous form, which they have in their own light. The angels look into the evil as often as they observe that they are striving to rise out of their hells into the world of spirits, and are intending to do harm to others; hence they are detected and cast back again. The cause of the angelic sight having so great an efficacy is that there is a correspondence between intellectual and ocular sight;

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and consequently there is a clearness in their vision, by virtue of which the infernal light is dispelled, and the evil appear of the form and character which they really are." [1]

We are told that "evil spirits cannot endure that angels should look at them, for they are instantly tortured and fall into a swoon." [2] The reason why the mere look of angels should produce such an effect upon evil spirits seems to be that when angels look at others they project something of their own personality upon them; and when they meet evil spirits, as the angels cannot tolerate the atmosphere of evil life they seek to dominate it and keep it away from them, and this they do by hardening themselves against the spheres of the wicked, and by projecting their angelic personalities upon them in a repressive way. As the presence of anything heavenly is torment to the evil spirits, when the angels look at them in such a dominating and forceful way, they must needs be tortured by the very look. Such dominating and repressive gaze of the eye seems to be exerted chiefly through the macula lutea,—the yellow spot in the centre of the retina, which seems to correspond to the dominative projection of one's personality to others by means of the look. It is no doubt the function of the heavenly societies who belong to this spot in the Greatest Man, by their dominative and

[1] *Heavenly Arcana*, 4533. [2] *Idem*, 4299.

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projective gaze, to drive back into their places the devils who attempt to rise out of hell in order to do harm to others.

In the Greatest Man of our earth, the eyelids are represented by the Aland Islands, lying between Sweden and Finland. The three coats of the eye are represented by Norway and Sweden, excepting the lower extremity of Sweden; the cornea seems to be represented by Stockholm and the surrounding territory. The ciliary muscle and processes are represented by the southern peninsula of Sweden, called Götaland. The circular fibres of the iris are represented by the island of Gothland, and its radial fibres by the island of Oland, both in the Baltic Sea. The aqueous humor is represented by the Baltic Sea, the crystalline lens by the island of Tahiti in the Pacific Ocean, and the vitreous humor by the Caspian Sea. The pigment cells in the eye are represented by the Fiji Islands.

In the Greatest Man of the universe, the cornea is probably represented by the earth not far from the sidereal equator, the spirits of which Swedenborg visited, and which he says has relation to the keenness of external vision.[1] It was perhaps the correspondential affinity between his own birthplace, Stockholm, and this far distant planet that led to Swedenborg's intercourse with spirits from it in the other world.

[1] *Heavenly Arcana*, 9969.

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In the Greatest Man of heaven, the societies of the eyelids are the angels who love to scrutinize objects accurately, so as to know their outward quality. They like to know who the persons are that they see, and what are the names of the objects they behold; and they are fond of giving expression to their opinions of the outward nature of things as gauged by the sight. As these angels are more external than the angels of the eye, they are well adapted to protect the more interior societies and to facilitate their operations.

The lachrymal societies are the angels who are easily moved to grief, and who are inclined to view the miseries and infirmities of human life through a veil of sadness. By their capacity for grief and their perception of the pathetic side of things, they clarify the vision of the other angels of the eye, making them more appreciative of the troubles of others and more tender-hearted in the way they regard their fellow men. The influence of the societies of the lachrymal gland and conjunctiva extends to the societies of the lachrymal sac and lachrymal bone, who gather the sad facts of human experience and are affected with sorrow at the contemplation of them. Through the sad thoughts of the societies of the nasal duct the perceptions of the lachrymal societies are communicated to the societies of the nose, and are helpful to the societies of the inferior turbinate

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bone, who love to perceive the whole range of psychological emotions in others.

The societies of the coats of the eye wish to see all things as they truly are in the light of the Divine truth, some seeing in a more emotional and perceptive way, and others seeing in more thoughtful and more purely cognizant ways. The angels of the cornea desire to see everything clearly without the least obscurity. The more external of these angels no doubt love to exercise merely physical sight in seeing objects; but the more internal love to use the sight of the mind, and to view all statements and theorems in the light of the Divine truth.

The societies of the pigment cells in the coats of the eye are the angels who are fond of perceiving and discriminating the whole gamut of colors and of presenting pleasant combinations of colorings. The more interior of these angels probably like to see things in the different aspects of truth to which colors correspond. Swedenborg speaks of a certain spirit, who could present delightful colors of every kind and beautifully colored forms, as relating to the coats of the eye; and in the following passage he says that colors, symbolizing the variations of intelligence and wisdom, belong to the provinces of the eye:

"Colors also are seen in the other life, which in lustre and brilliancy so far exceed the brightness of

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colors in the world, that there is scarcely any comparison. They exist from the variegation of light and shade there; and because it is intelligence and wisdom from the Lord that appears there as light before the eyes of angels and spirits, and at the same time inwardly illuminates their understanding, therefore colors in the other life are in their essence variations, or, as it may be said, modifications, of intelligence and wisdom. Colors, not only those with which flowers are adorned, the atmospheres illumined, and rainbows varied, but also those which are presented distinctly in other forms, have been so often seen by me in the other life that the different times could scarcely be enumerated. Their lustre is from the truth of intelligence, and their brilliancy is from the good of wisdom; and the colors themselves are from the brightness and obscurity of these. Thus they exist from light and shade, like colorings in the world. . . . In general, colors in the other life have lustre and partake of brightness so far as they exist from the truth of intelligence, and have brilliancy and partake of crimson-red so far as they originate in the good of wisdom. Those which thence derive their origin belong also to the provinces of the eyes." [1]

The societies of the aqueous humor love to receive and to store up literal impressions of sight. They are content merely with definite images, and make no effort to notice distinctly the attributes of objects of sight, nor to formulate visual images into ideas.

[1] *Heavenly Arcana*, 4530.

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The societies of the crystalline lens are they who delight in taking visual note of the outward characteristics of objects, and in impressing these characteristics strongly and distinctly on the mind. In consequence of such distinct mental notice they are able to remember clearly the external attributes of whatever they see.

Closely connected with the societies of the lens are the societies of the ciliary muscle and processes, whose bent is to look at things in order to find confirmations of preconceived theories; and some of these societies regard statements presented merely to see whether they agree or not with doctrines already accepted. The societies of the crystalline lens no doubt co-operate with the ciliary societies and gather clear knowledge of the outward characteristics of things for their use. The ciliary societies must love to see confirmations of the views held by the various heavenly societies in all the facts of nature and the Bible, and they add greatly to the wisdom and certitude of the entire heaven by collecting large stores of confirmatory evidence.

The correspondence of the societies of the ciliary body explains why, as Swedenborg says, some of the spirits who have reference to the ear "are intimately conjoined with those who belong to the internal sight, from whom they are distinguished by not having so much discernment,

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but assenting to them as passive"[1]; for the countries and islands of our planet represent in a modified way the faculties of the brain, and the islands of Denmark, corresponding to the faculty of determining the validity of evidence, adjoin the Swedish peninsula of Gōtaland, corresponding to the faculty of seeing things with reference to their confirmation of theories. Although the lands of our earth represent primarily the faculties of the brain, they also represent the parts of the body; for the latter are outward manifestations of the former. Hence, while in the body the ciliary muscle and processes are entirely separate from the auditory ossicles, the faculties to which they correspond lie close to each other in the brain, as is evident from the proximity of the Danish islands to Sweden. Moreover, the ciliary societies of the eye perform the more active and original work of accumulating evidence and confirmations for theories, while the societies of the auditory ossicles render the more passive and less original service of determining whether the confirmations so collected can be regarded as true evidence.

The societies of the vitreous humor do not, like the societies of the aqueous humor, receive literal images from objects and rest satisfied with these; but they obtain distinct visual impressions in order to frame for the mind an adequate idea of

[1] *Heavenly Arcana*, 4653.

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the appearance of objects. To the societies of the vitreous humor the heavens are indebted for their mental ideas of the objects of sight; and these ideas, when communicated to the highest heaven, are doubtless transmuted into the correspondences of the objects seen, for the correspondence of an object can be perceived from a clear visual idea of its structure and form. Such transformation of distinct visual ideas of objects into perceptions of their correspondences is probably effected in the province of the fifth ventricle, which seems to be the cerebral correlative of the vitreous humor.

The societies of the iris are the angels who love to inspect and to supervise things personally, and they are no doubt often entrusted with duties requiring a great deal of direct examination and oversight. Swedenborg tells us that the infants who die are taken up in the other world into the provinces of the eyes, in order that they may be under the immediate view and auspices of the Lord [1]; and as the societies of the iris are very proficient in immediate inspection and oversight, it is possible that the little children in the eyes are under their general charge.

The societies of the pigment cells of the iris seem to be the angels who like to view objects and facts from some particular and distinctive standpoint, and not from a general, undiscriminative

[1] *Heaven and Hell*, 333.

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point of view. These angels determine the different standpoints from which the heavens view the same set of facts, and, taken together, they constitute the collective visual individuality of the whole heaven.

The societies of the rods and cones in the retina are the angels who love to look intently at objects, and to take vivid impressions of their appearance, the societies of the rods being more emotional, and those of the cones more intellectual. Through these angels all the impressions of sight received by the several societies of the eyes are communicated to the societies of the optic nerve, by which they are adequately conveyed and reported to the brain of heaven for the information and use of the celestial angels.

Swedenborg has a great deal to say of the different provinces of the eyes, and speaks of several kinds of heavens in them. He describes a paradisal heaven, where are variously colored atmospheres, and where the whole air glitters as if from gold, silver, pearls, precious stones, flowers in minute forms, and numberless other objects, and also mentions a rainbow heaven, where appear very beautiful rainbows, great and small, variegated with the most lustrous colors.[1] The various remarks of Swedenborg on the subject have been admirably applied by Worcester

[1] *Heavenly Arcana*, 4412, 4528

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to the heavenly societies of the eyes,[1] but Swedenborg's statements are scarcely definite enough to admit of very reliable interpretation in this direction.

[1] *Physiological Correspondences*, pp. 304–311.

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THE NOSE

THE nose is composed mainly of cartilage and bone, and its chamber is divided into two compartments by a central partition or septum. At its upper end the nose is separated from the brain by the cribriform plate of the ethmoid bone, through numerous perforations of which branches of the olfactory nerve pass, to be distributed to the upper part of the sensitive membrane lining the inside of the nasal chambers; and at the lower end the nose is separated from the cavity of the mouth by the palate. The openings of the nostrils are continued back over the palate into the pharynx, and afford an air passage through the nose to the throat and lungs. The lower portion of the nose is made up for the most part of cartilages; but in the upper portion the inner and outer walls are formed largely by the nasal bone, the nasal process of the superior maxillary bone, the ethmoid bone, and the inferior turbinate bone.

The interior of the nose below the superior turbinated process of the ethmoid bone is covered

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by ordinary ciliated mucous membrane; but in the region of this process the epithelium loses its cilia and becomes specially modified into columnar and spindle-shaped cells, which are connected with terminal filaments of the olfactory nerve. In these epithelial cells of the olfactory mucous membrane resides the sense of smell, which is excited by odorous particles inspired with the air being dissolved or suspended in the fluid overlying the membrane, and coming into contact with these epithelial cells, which transmit their sensations to the brain through the olfactory nerve. In the olfactory region of the mucous membrane are imbedded numerous tubular glands, the secretions of which serve to moisten the membrane; and as a proper amount of fluid is necessary for the production of an accurate sense of smell, these glands are an important adjunct to the formation of olfactory sensations. Many other glands, resembling clusters of grapes, are located in the lower or respiratory part of the mucous membrane.

The sense of smell is exceedingly delicate, and it can detect the presence of odorous substances and vapors in the air even when almost infinitesimally small. The air is full of such minute particles emitted from everything in nature, and the nose perceives distinct odors from many of them, but not from all. In the other world, however, the sense of smell is much keener than

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in this world, and its range of perceptions is correspondingly greater; and we are told that even human spheres become odorous there, and that the quality of every one's life and thought is made manifest by the odor of his sphere:

"When any spirit is coming toward others, although he is yet at a distance and hidden from view, his presence is perceived, as often as the Lord grants it, from a certain spiritual sphere; and from this sphere the quality of his life, affection, and faith is known. Angelic spirits, who are in more exquisite perception, hence know innumerable things in regard to the state of his life and faith. This has been shown to me on many occasions. These spheres, when it pleases the Lord, are also turned into odors; the odor itself is manifestly perceived. The reason why those spheres are turned into odors is that odor corresponds to perception; and because perception is as it were spiritual odor, hence also the odor descends." [1]

The nose, exclusive of its bones, corresponds to the perception of internal quality; for it perceives not the grosser elements of matter like the tongue, but the light odorous particles which are thrown off by animate and inanimate objects and constitute the expression of their inner nature, and which are inappreciable to any other sense of the body. It is the faculty of perceiving truly the inward quality of others, as, for instance,

[1] *Heavenly Arcana*, 4626.

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whether they are internal or external, clever or stupid, efficient or inefficient, credulous or sceptical, progressive or unprogressive, and so on.

The above correspondence assigned to the nose is clearly set forth by Worcester[1]; and this is one of the few cases in which exactly the same result has been reached by his method of studying the correspondences of the bodily organs through a knowledge of the most important general facts relative to their functions, and by the method herein employed of studying correspondences through an exact idea of their structural appearance. Too little is known of the distinctive functions of the organs and tissues of the body to make it possible to perceive their true correspondences by a consideration of their functional activities merely; and any successful correspondential study of the parts of the human body must be based on a perception of the correspondences of their structural forms, and the accuracy of such perception must then be tested by its agreement with whatever functional data are known. When the correspondence of the organ or tissue has been obtained, the correspondence of its function can readily be seen. As interpretive of the societies of the Greatest Man of heaven, the correspondences of anatomical structure reveal the nature of the angels belonging to the several provinces, and the correspondences

[1] *Physiological Correspondences*, pp. 181, 188.

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of physiological function indicate their distinctive activity.

Worcester states also that the nose corresponds to the faculty of perceiving what is abstractly true and wise, which is something entirely different from the faculty of perceiving internal quality, and which, moreover, does not seem to be correct. There is nothing in the structure of the nose to suggest such a correspondence; and the perception of what is abstractly true seems rather to be the function of the lungs, which, under the influence of inspiration from above, perceive the abstract truth represented by the inbreathed air. It is true that the air destined for the lungs passes first through the nostrils; but it is the lungs, and not the nostrils, that draw in the air. The air must come in contact with the membrane of the nose, in order that the odorous particles floating in the air may be perceived by the olfactory cells; but its need of receiving the air simply renders the nose the most appropriate organ to act as a conveyer of air to the lungs, and does not cause it to correspond to the perception of what is abstractly true. There is a comparative simplicity of form and diversity of function in the human body, and the reason therefor is doubtless the prevention of unnecessary and cumbersome duplication of organs. Every organ has evidently been selected for a special use in the human body because of its correspondential ability and fitness to perform

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some primary function, and then to this original function have been added any supplementary functions which are necessary for the harmonious combination and efficient operation of the body as a whole; thus the larynx, while it corresponds to the faculty of giving commands, has the function of producing all vocal sounds whether in commanding or otherwise. Such diversity of function, and the difficulty of recognizing the primary function which alone reveals the true correspondence of the organ, render still more unreliable the study of anatomical correspondences solely through a knowledge of functions.

The upper portion of the nose proper corresponds to emotional and concrete perception of internal quality, and the lower portion corresponds to intellectual and abstract perception of internal quality. The columnar supporting cells of the olfactory mucous membrane seem to have the function and correspondence of taking cognizance and giving notice of the presence of odors; and the spindle-shaped olfactory cells, connected with terminal filaments of the olfactory nerve, seem to have the function and correspondence of sensing the exact smell. The tubular glands of the olfactory mucous membrane seem to correspond to particular perceptions of the internal quality of objects and persons founded on their odor or sphere. When there is little perception of the inward purity or vileness

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of things as shown by the sweetness or foulness of their odors, a comparative insensibility to such odors results; just as, when insufficient fluid is secreted by these glands, the sense of smell is greatly impaired. The acinous glands in the respiratory tract of the mucous membrane seem to correspond to general perceptions of the internal quality of others based on actual contact with them.

Worcester gives the following as the correspondence of the cartilages and bones of the nose:

"The things which have been said of the nose relate especially to the sensitive lining of it. Besides this, the great body of the nose is composed of cartilages and bones which protect the nerves, and support the membranes in the forms and positions which are necessary to their uses. The angels who are in these parts of the nose of the Greatest Man hold strongly and firmly to the right and duty to examine all the spheres of life that come to it, and to admit to the Heavenly Man the sphere of the Lord's genuine truth. The same parts in an individual correspond to his hold of the right to think for himself as to the agreeableness or disagreeableness to him of states or spheres of life and thought. Hence a prominent nose indicates a certain degree of independence of thought and opinion." [1]

But the nasal cartilages are as much a part of the faculty of perceiving internal quality as is the

[1] *Physiological Correspondences*, p. 189.

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nasal membrane, although the cartilages represent a more interior mental penetration, which is not so dependent for its perceptions on sensuous contact with the spheres of others as are the glands of the mucous membrane. The above correspondence, which is manifestly based on the general functional fact that the cartilages and bones give firmness to the nose, and not on any study of the particular cartilages and bones, applies only to the nasal process of the superior maxillary bone, which seems to correspond to the determination not to be dominated in one's perceptions of internal quality by the opinions of others. As stated in the chapter on the bones, the nasal bone corresponds to the perception and knowledge of inward character; the inferior turbinate bone, to the perception and knowledge of interior or psychological states of mind; and the ethmoid bone, to vigilant watchfulness. The turbinated processes of the ethmoid bone may correspond to the scenting of the approach or presence of others who are hidden from view.

According to Swedenborg, the nose purifies the arterial blood on its way to the brain, and also purges the organs of the head from their phlegms[1]; and this action doubtless corresponds to the removal of dense and obscure thoughts, which the perception of internal quality represented by the

[1] *Animal Kingdom*, 346, 347; also the chapter on Smell in Part IV. of same work.

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nose is quick to discern and to reject. Hence the perception of internal quality must be of great service to the whole man in searching out and discarding whatever is evil and inefficient. Swedenborg gives an instance of the casting down by the angels of the nose of dull and stupid spirits who had insinuated themselves into interior provinces for the purpose of ensnaring others, and who had reference to the mucus of the nostrils.[1] Such purification by the angels of this province closely resembles the function of the nose, by virtue of which it removes and casts down the mucus in the blood and in the organs of the head and brain.

The manifold variations in the shape of the nose in different individuals all have their special meanings; but in general a long nose indicates profound perception of internal quality, a short nose superficial perception, and an aquiline nose keen perception.

In the Greatest Man of our earth, the nose, exclusive of the bones, is represented by Afghanistan and Beluchistan.

In the Greatest Man of heaven, the societies of the nose are they who enjoy above all others the perception of the internal quality of persons and things. The societies of the nose proper, together with the societies of the nasal bone and the inferior turbinate bone, are skilful in searching

[1] *Heavenly Arcana*, 4627.

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out and accurately determining the essential quality, character, and interior states of mind of all with whom they meet; and their pleasure in perceiving the good and wise qualities and states of others, as well as their aversion to evil and stupid states, are communicated to many other societies for their refreshment, guidance, or warning. These angels perceive the inward quality of all who come heavenward, and their perceptions must be of great assistance to the provinces of the teeth and tongue in ascertaining the real nature of the spirits who seek admission to heaven. Moreover, if any spirits come into higher societies than they are fitted for, the angels of the nose are quick to perceive their incapacity and to effect their removal.

In the upper provinces of the nose, the societies perceive emotionally and concretely the internal quality of individuals, and judge largely by the atmosphere of the feelings which they bring with them; but in the lower nasal provinces the societies perceive more intellectually and abstractly, and estimate the internal quality of others mainly by the general tenor of their words and deeds.

The societies of the nasal bone do not perceive internal quality, like the angels of the nose proper, but they are keen to discern the inherent goodness or wickedness of the character of others; and the societies of the inferior turbinate bone

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possess a wonderful perception of the interior states of mind of individuals, and indeed of the whole heaven.

These and other societies constitute the aggregate nose of the Heavenly Man, and they discharge many important duties in that capacity.

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THE CHEEKS AND CHIN

THE rigid bony framework of the sides and bottom of the face is overlaid by the pliable muscular cushions of the cheeks and chin, which impart rounded contour and beauty to these portions of the face. A number of muscles combine to form the muscular tissue of the cheeks and chin, but not all of them strictly belong thereto; thus, the buccinator muscle, which constitutes the inner muscular layer of the cheek, is chiefly concerned with keeping the food between the teeth during mastication, and therefore it belongs to the region of the mouth rather than to the cheeks. The platysma myoides muscle, although it forms a part of the cheek, extends also across the neck to the chest.

The cheeks correspond to good-will toward others in general, and the chin corresponds to good-will toward individuals. The platysma myoides muscle corresponds to the outward expression of good-will in the manner and conduct. The cheeks are the home of smiles betokening good-will, and this fact corroborates the correspondence assigned to them.

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The muscles of the cheeks and chin are the most expressive of the facial muscles; and by their interaction they body forth, on the one hand, the smiles and sympathy of good-will and benignity, and, on the other hand, the sneers and snarls of ill-will and malignity. In conjunction with the other facial muscles, the muscles of the cheeks and chin have the function of mirroring many other emotions of the mind besides those of good-will and its perversion, and the appropriateness of these muscles for such a function may be due to the circumstance that nearly all our emotions exert an influence on our feeling of good-will toward others.

If the cheeks and chin correspond to good-will, large cheeks and chins, under normal conditions, should correspond to a well-developed faculty of good-will; and it seems to be true, as a general rule, that persons with plump cheeks possess more good-will toward others than persons with meagre cheeks, for the latter are apt to be gloomy and irritable, while the former are usually serene and pleasant. A prominent chin, if it is due to the size of the chin muscles, indicates a large degree of good-will toward individuals; but if it is owing to a large development of the lower jaw-bone, it indicates an ability to dominate individuals. Hence, a receding chin is regarded as a sign of weakness, because it shows inability to dominate outwardly other individuals.

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In the representative worship of the Jewish Church, the two cheeks of sacrificial offerings were given to the priests as their due,[1] because emotional and intellectual good-will, which is represented by the two cheeks, should be a special attribute of the priesthood. So, too, when the Lord says in His symbolic language, "Resist not evil; but whosoever shall smite thee on thy right cheek, turn to him the other also," [2] He means that, if our emotional good-will is affronted by others, we should not withdraw our good-will from them and return a similar rebuff, but should rather offer to those who offend us an intellectual good-will expressed with more conscious effort. Such conduct is figuratively turning the left cheek after the right has been smitten.

In the Greatest Man of our earth, the cheeks and chin are represented by Indo-China, and the platysma myoides muscle is represented by the Malay Peninsula.

In the Greatest Man of heaven, the societies of the cheeks and chin are the angels who are in unbounded good-will and benignity to all, whether collectively or individually. The different societies express their good-will in different ways; some express it by a smiling pleasantness, some by a sympathetic amity, and some by benevolent manners.

The hard and dominating severity of the

[1] Deuteronomy xviii., 3. [2] Matthew v., 39.

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societies of the facial bones is tempered and rendered less unlovely by the smiling attractiveness of these gentle angels.

The mobility of countenance possessed by the societies of the cheeks and chin, by which they are able to express readily all the shades of goodwill and benignity, comes also into play for expressing the varied moods of the whole heaven; for it is mainly through the societies of the face and eyes that the affections of the Heavenly Man are visibly portrayed, and no matter how benevolent the feelings of the angels of the cheeks and chin may be, they must mirror to others the emotions of the other provinces of heaven toward them, whether favorable or unfavorable.

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THE LIPS, TEETH, MOUTH, AND TONGUE

THE soft, flexible, muscular lips are the first doors guarding the entrance to the body. They consist chiefly of the orbicularis muscle, which interlaces with fibres from surrounding facial muscles; and they are endowed with marked sensibility, owing to the presence of sensory papillæ resembling the corpuscles of touch.

The chief office of the lips is the reception and introduction of food. This use is most evident in drinking, when, in conjunction with the cheeks, fauces, and tongue, the lips draw in the liquid, and introduce it into the mouth; but the lips perform a similar use in laying hold of solid food and drawing it into the mouth. The lips also co-operate with the cheeks and tongue in pressing the harder portions of solid food between the teeth, in order that the particles may be separated and the inner contents set free; and they unite with these organs in gently pressing and examining the food, crushing its softer portions against the hard palate and gums, and bringing it into contact with all the absorbing

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surfaces of the mouth. Through their exquisite sensibility the lips are able to detect the presence of anything prickly, caustic, or otherwise injurious in the food, and to warn the tongue against its reception. By reason of their mobility and their intimate connection with other facial muscles, the lips share in the facial expression of the thoughts and emotions of the mind.

Continuous with the mucous membrane lining the lips and mouth is the firm red tissue forming the gums, which affords a dense covering and support for the necks and roots of the teeth as they rest in the sockets specially provided for them in the maxillary bones.

Based upon the gums and partly enclosed by them are the teeth, the main substance of which is the hardest and most resistent structure in the body. The teeth are divided into four kinds, consisting of molars, bicuspids, canines, and incisors.

The function of the teeth is to masticate the harder morsels of solid food, in order that their contents may be thoroughly disclosed. The incisor teeth bite off the quantity of food to be taken into the mouth at any one time, and also cut up some of the fragments, the action of the canines is similar to that of the incisors, the bicuspids break up the food into small pieces, and the molars grind and separate all the remaining particles.

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The roof of the mouth is formed by the hard palate and the soft palate, and its floor is formed by the tongue.

The hard palate is a process of the superior maxillary and palate bones, and is covered by periosteum and firm mucous membrane. The soft palate consists of two layers of mucous membrane, with intervening muscles, nerves, vessels, and tissue, and runs backward and downward from the hard palate to the pharynx. The soft palate presents two arching folds, known as the anterior and posterior palatine arches or pillars, and from its centre between these arches there hangs, like the tip of a finger pointing downward, a conical projection named the uvula.

Through special ducts opening into the forward part of the mouth three sets of salivary glands pour their watery and viscid secretions, which, mingling with the food during mastication, partially convert starchy materials into sugar, unite with the purer juices of the food which are absorbed in the mouth directly into the blood-vessels, and render the remainder of the food a soft, pulpy mass which can be easily swallowed.

At the sides of the throat between the anterior and posterior palatine arches lie the tonsil glands, the viscid secretion of which serves, like the viscid part of the saliva, to lubricate the mass of food as it passes, and to enable it to be readily swallowed.

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The tongue is composed mainly of muscular tissue, and the greater part of its upper surface is thickly studded with tactile and gustatory papillæ, which give this portion of the tongue its characteristic rough appearance. The chief sensoria of taste are groups of modified epithelial cells known as taste buds, which are found on certain parts of the tongue.

The tongue has the functions of taking hold of or rejecting the food received by the lips; of tasting its quality; of pressing the harder portions between the teeth for rigid examination; of absorbing through appropriate pores, for the benefit of the brain and the general system, the purer essences and spiritous elements contained in the food; and of conveying the mass of salivated food backward to the pharynx in the act of swallowing.

At the root of the tongue is the epiglottis, a thin, leaf-like plate of fibro-cartilage, which serves to close the entrance to the trachea during swallowing, and so to prevent the food from falling into it. Taste buds similar to those of the tongue exist on the pharyngeal surface of the epiglottis, and indicate some perception of taste in that organ; but since, by reason of their situation, these buds can come into contact with nothing but the air, it must be a perception of flavor rather than of real taste, and it is not unlikely that the epiglottis joins with the nose in perceiving the flavors of fine beverages, the perception

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of the excellence of which depends largely upon the sensing of the odorous particles they emit into the air.

After the food has been sufficiently masticated, it is gathered up into a mass resting on the back of the tongue, and by the tongue's movement is carried backward and thrust through the anterior palatine arches. During this action the soft palate is raised so as to touch the posterior wall of the pharynx, the curved edges of the posterior palatine arches are brought nearer together, and the small gap between them is filled up by the uvula. In this manner the food is prevented from entering the nasal chamber above, while below its progress is guided by the epiglottis, which forms a bridge for its passage over the top of the trachea. Thus directed and guided the food is delivered into the pharynx, by which it is immediately seized and quickly transferred to the œsophagus, and so started on its way to the stomach. In addition to its function of keeping the food out of the nasal chamber, the uvula provides that the mucus of the nose does not come into the mouth and blunt the delicate sensoria of taste by mingling with the saliva, and also that it does not fall into the open trachea, but that it is properly directed downward to the back of the tongue, whence it is conveyed into the pharynx.

All the foregoing organs assist also in the production of speech, giving final form to the vibra-

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tions of the trachea and larynx; and as in their introductory office of receiving and examining physical food they represent in general the love of receiving and examining mental food, so in their outward office of assisting in the production of articulate speech they represent a love of giving ultimate expression to the feelings and thoughts of the mind, and thus of being its mouthpiece.

The lips correspond to the faculty of receptiveness, for their function is to receive food and to draw it into the mouth. But as it is impossible to remain in a receptive state of mind when a person is tired or when he is initiatively busy, the lips correspond also to the love of resting while others are active, and of watching them in their activities; for in this way, with alternate rest and action, the receptive state can be indefinitely prolonged.

Receptivity can be exercised either toward knowledge or toward persons: when applied to knowledge, it is the love of receiving new knowledge and wisdom for the use of the mind; and when applied to persons, it is the love of receiving them with receptive responsiveness to their states of mind. A function similar to that of the lips is performed by reception committees in human society.

The gums, which are intermediate in their position and structure between the lips and the jawbones, correspond to the faculty of forcing

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one's sphere over others, either for the purpose of resting or for the sake of maintaining one's own individuality.

The teeth, which are developed from papillæ of the mucous membrane, correspond to the faculty of determining by keen examination the real fitness of ideas for acceptance; for it is the function of the teeth to penetrate the hard morsels of food, to lay bare the contents, and to reject as worthless whatever is too hard to be opened. The fitness of ideas for mental pabulum seems to depend largely upon their containing some interior perception and thought, and so some inner life and substance; for mere facts are probably as useless for spiritual nourishment as bits of bone and other hard particles are unfit for natural food.

The maxillary bones, into grooves of which the teeth are set, correspond, as was stated above, to the faculty of dominating, which consists in forcing one's sphere upon others, and not receiving their spheres in return; but the teeth, while retaining something of the dominative power of the maxillary bones, are willing to admit others and their spheres provided they find upon careful examination that these are worthy to be admitted into the life of the individual or the society. The four kinds of teeth correspond to the examination of applicants by keen inquiry as to their feelings, thoughts, knowledge, and statements. The molars correspond to examination

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as to feelings and motives; the bicuspids, to examination as to thoughts; the canines, to examination as to knowledge and conduct; and the incisors, to examination as to the correctness of statements made. The central incisors correspond to testing the statements of applicants by requiring credentials from other persons of standing which will vouch for the good character and ability of the applicants, and the lateral incisors correspond to testing such statements by asking applicants examinative questions, and determining by their answers their fitness for admission. In a more abstract and impersonal sense, the central incisors correspond to determining the fitness of ideas or teachings for acceptance by the recommendations of others, and the lateral incisors correspond to determining such fitness by the test of one's own standards. A thorough examination by the mental teeth of the real fitness and worth of what is presented for our acceptance is as necessary for the proper assimilation of ideas by the mind as thorough mastication is essential to good bodily digestion.

The incisors bite off the quantity of food taken at one time into the mouth, in the same way that the faculties of requiring testimonials and references, and of asking test questions, are employed for regulating the admission of new members to the various human societies. The more interior action of the canine, bicuspid, and molar teeth is

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represented by the more interior examination of applicants as to their knowledge and previous work and conduct, as to their thoughts and opinions, and as to their feelings and motives.

The first or outermost molars are the earliest of the permanent teeth to be formed, and appear at six years of age; while the third or innermost molars, known as the "wisdom teeth," are the latest of all to be developed, and do not usually make their appearance until about the twenty-first year. This peculiar growth of the molars indicates that a keen examination of ideas, based on emotional knowledge, is the first aspect of the above examinative faculty that a person permanently acquires; whereas a deep and perceptive examinative mentality, which is able to determine real fitness by an examination of the inmost feelings, tendencies, and motives, is of comparatively late development in the individual mind.

Swedenborg speaks of the disputes of the evil as sounding like the gnashing of teeth [1]; for the evil love to argue over what is worthy of acceptance, and their keen disputes as to inherent strength or weakness of ideas and arguments are like the gnashing of teeth.

Of Judah it is declared in the Bible that "his teeth shall be white with milk," [2] words which signify that his keen inquiry as to the real fitness

[1] *Heaven and Hell*, 575. [2] Genesis xlix., 12.

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of teachings will be made purely in a spirit of helpfulness toward others; and the destruction by the Lord of the keen mental power by which the evil essay to show the unsubstantiality and worthlessness of spiritual truths is what is meant in the Psalms where we read, "Thou hast broken the teeth of the wicked." [1]

The hard palate corresponds to the faculty of hard domination, attained by mentally forcing one's self over others; and the soft palate corresponds to a gentler kind of domination, which insists merely that established rules shall be obeyed. It is one of the rules of the body that food shall not be allowed to pass from the mouth into the nasal chamber, and the pillars of the soft palate, together with the uvula, are entrusted with the duty of enforcing compliance with this rule. The duty of the anterior pillars is to ascertain the wish and purpose of anything going thither, the duty of the uvula is to make known the prohibitive rule and point out the downward direction which has to be taken, and the duty of the posterior pillars is to block the upward passageway.

The salivary glands correspond to the faculty of perceiving the needs of the mind and body, and the saliva is information or knowledge as to such needs. The knowledge of his needs gives a person interest in what is offered to him, and prepares

[1] iii., 7.

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him for ready acceptance if he has any want therefor; and this mental process is the same as the functions of the saliva, which mingles with the food, partially converts its starch into sugar, and prepares it by moisture for ready swallowing, for the acceptance of an idea is represented by the act of swallowing food. The tonsil glands correspond to the faculty of giving information as to the general condition of affairs. As the secretion of the tonsils lubricates the food, and facilitates its being swallowed, so information as to the general state and condition of the mind in its various departments facilitates the entrance of new ideas; for it instructs them as to the actual conditions which they will meet, and thus initially prepares them for entering into these conditions, and being adapted to them. Worcester gives the correspondence of the saliva with reference to the Greatest Man as "fresh information concerning the state and wants of the Heavenly Man and the world of spirits" [1]; but the saliva corresponds to information concerning the wants, and the secretion of the tonsils corresponds to information concerning the state, of the Greatest Man.

The tongue corresponds to the faculty of perceiving external quality; for the tongue does not, like the nose, come into contact with the volatile particles constituting the spheres of objects, and perceive their quality, but it comes into contact

[1] *Physiological Correspondences*, p. 28.

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with the objects themselves, and perceives their sweetness, bitterness, acidity, alkalineness, and other outward qualities, so far as these can be sensed by the taste. It is a faculty that delights to meet new varieties of persons and things, to perceive their outward quality, and to ascertain whether or not they are in harmony with its own life. It deals with the exteriors of others, not with their interiors. In fact, the tongue seems to represent the whole range of man's outward likings or tastes, whether mental or physical; for we are told that spirits and angels are not permitted to flow into man's taste, lest they should interfere with his individuality. [1]

In regard to the tongue, Swedenborg states:

"The tongue affords entrance to the lungs and also to the stomach. Thus it represents a sort of court-yard to spiritual things and to celestial things: to spiritual things, because it ministers to the lungs, and hence to the speech; and to celestial things, because it ministers to the stomach, which furnishes aliment to the blood and the heart. Wherefore the tongue in general corresponds to the affection for truth, or to those in the Greatest Man who are in the affection for truth, and afterward in the affection for good from truth. They therefore who love the Word of the Lord, and desire from it knowledges of truth and good, belong to that province; but with this difference, that some belong to the tongue itself, some to

[1] *Heavenly Arcana*, 4793.

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the larynx and trachea, some to the throat, some to the gums, and some to the lips; for there is not the slightest thing in man with which there is not correspondence." [1]

The epiglottis, which lies behind the root of the tongue, is connected therewith by mucous membrane, shares therewith its branch of the vagus nerve, and exhibits similar taste buds, corresponds to the faculty of perceiving the interior things of external quality. Hence it is the faculty of perceiving whether a person or thing is really cultured and fine, or whether he is unrefined and coarse; and it no doubt perceives spiritual as well as natural fineness.

This faculty is intermediate between the perception of internal quality represented by the nose and the perception of external quality represented by the tongue; and this circumstance accounts for the position of the epiglottis between the nose and the tongue, and for its participation in the functions of both. The correspondence of the epiglottis also explains its function of closing the trachea; for it opens the trachea to admit the air which is necessary for its perception of fine flavor, but closes the trachea at the approach of the coarse food, for which it does not care. The epiglottis should be well developed in connoisseurs.

It is a singular fact that Swedenborg attributes

[1] *Heavenly Arcana*, 4791.

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all the senses to spirits in the other world except the sense of taste, stating that they have not taste, but something analogous, adjoined to the smell.[1] It is probable that the sense which they have is that exercised by the epiglottis, which is a sort of interior taste, adjoined to the smell.

In the Greatest Man of our earth, the lips are represented by Senegambia; the gums, by Sierra Leone; the teeth, by Fernando Po Island; the hard and soft palates, by portions of Guinea; and the tongue and epiglottis, by French Congo and Kamerun.

In the Greatest Man of heaven, the societies of the lips, teeth, mouth, and tongue are of special interest to us, because they constitute the heavenly provinces where men are first received after death; for the food of the Greatest Man is the innumerable spirits who throng heavenward after death from all the earths in the universe.[2]

The societies of the lips are the receptive angels who love to receive newly deceased spirits, and to assist in drawing them out of the natural world and introducing them into the province of the mouth of the Greatest Man. Swedenborg tells us that, at the resurrection of the dead, angels from the kingdom of the heart are present, who open communication with that province, and inspire spiritual affection[3]; and it is possible that

[1] *Heavenly Arcana*, 1516, 4794. [2] *Idem*, 5175.
[3] *Heaven and Hell*, 449.

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these angels are represented by the blood which circulates in the blood-vessels of the lips.

It is the joy of the angels of the lips to receive gently the spirits who come to them, and to introduce them into the mouth of heaven; but spirits who are thoroughly evil cannot be retained long in this province, and must be rejected as soon as their real nature is perceived. Doubtless the angels of the lips, by their exquisite sensibility, are able to warn the angels of the mouth and tongue of the entrance of any spirits whose presence is likely to prove injurious to the Greatest Man.

If the newly resuscitated spirit is qualified, in consequence of an earthly life of pure goodness and spiritual enlightenment, to enjoy the life of heaven without further preparation, the angels of the absorbing vessels of the tongue and mouth receive him into their midst, and start him immediately on his way to his respective society; and such immediate reception is like the reception of the purer juices of the food, which are absorbed at once by the blood-vessels, and borne into the circulation of the blood. Infants and little children are also taken into heaven by these direct paths. But if, as is the case with the majority of even good persons at the present day, the new spirit has attended in the life of the body mainly to the good appearance of his life before others, without much thought as to his interior motives

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and principles, and if he still has many false ideas and evil habits clinging to him from which he must be rid before he is fitted to become a member of a heavenly society and to participate in the life of the angels, then he must submit to such discipline, training, and instruction as are necessary for his complete preparation and purification. This purifying preparatory process is like the treatment accorded to the coarser food, which is not at once admitted into the blood-vessels, but which is passed through the œsophagus, and subjected to various corrections and chastenings in the stomach and intestines, in order to separate it from innutritious and unwholesome elements before being taken into the blood; for spirits who are in the alimentary canal of the Greatest Man are not yet a part of heaven, but are merely passing through it in an introductory and probationary manner; but when they are representatively in the blood-vessels and on the way to their respective societies, then they become an integral part of heaven. The new spirits, however, whose life has been inwardly evil, in spite of the appearances of good which they have been able to exhibit before others, are compelled to disclose their true natures, and, after all their pretences of goodness have been thoroughly exposed, they are rejected by the angels as unfit to be incorporated in the Greatest Man; and these evil spirits are like the hard, foul, and worthless food,

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which is thrust into the intestines, and is finally cast out as excrement.

The societies of the gums are the angels who love to rest or to maintain their individuality by forcing their spheres over others who are active. The societies of the hard palate are the angels who are fond of mentally forcing their spheres upon others, and of thus dominating them. The societies of the soft palate are the angels who exercise a gentle domination, and who are mainly concerned with seeing that established rules are complied with. By their firmness and dominative strength these societies lend support to the societies of the teeth, and dominate and control the crowds of spirits who flock into heaven through the gates of the lips. The societies of the gums and hard palate also assist the societies of the tongue in their efforts to ascertain the real quality of the gentler spirits who are willing to make known their past lives without a rigid examination.

The societies of the teeth are the angels who delight in determining by keen examination whether the spirits who wish to enter heaven are worthy to be admitted. To all comers they say: "No one is admitted here who cannot show his fitness to enter. Now, what have you to vouch for your fitness? what has been your preparation for heaven? what have you known and done and thought and felt and purposed during your life

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in the natural world?" Like the teeth, which feel the smallest hard particles coming between them, and know just where pressure is necessary, these angels have a fine tact for hypocrisies and concealment; and it is their duty to perform the keen examination of spirits' past lives by which their whole memory is opened and their innermost motives are explored.[1]

The angels of the central incisor teeth demand credentials as to their good character from spirits seeking to enter, which no doubt are furnished in many instances by the friends who have preceded them into the spiritual world; and the angels of the lateral incisor teeth ascertain the worthiness or unworthiness of spirits to be admitted by asking them test questions, and judge by their answers whether their lives are up to the standard of heavenly requirement. Such action on the part of the angels of the incisors is like the function of the incisor teeth in biting off the quantity of food desired, and these angels must largely determine the number of spirits admitted at any one time into the province of the mouth.

It is possible that the better spirits receive only the soft welcomes and gentle treatment of the angels of the lips and tongue, with perhaps a little needful pressure from the angels of the gums and hard palate, and that they are not brought at all before the societies of the teeth; but,

[1] *Heaven and Hell*, 462, 463.

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however that may be, it seems certain that good, open-minded spirits, whose quality is easily perceived, are not subjected to any further examination by the societies of the teeth than that which is performed by the incisor angels. But all spirits whose interiors are concealed, either in consequence of a life of external morality not consciously actuated by spiritual motives or for the purpose of hiding the inward life, are forced to submit to the keen examination of the angels of the canine, bicuspid, and molar teeth, in order that whatever is in them may be brought forth to view. These angels lay open to the last detail the whole past life of a spirit, and disclose all his acts, thoughts, feelings, and motives; and if any spirit persistently refuses to submit to their examination, he is rejected from the province of the mouth as totally unfit for admittance to heaven.

After the innermost secrets of the spirit's past life have thus been made manifest by the angels of the teeth, and his fitness or unfitness for entrance to heaven determined upon, the societies of the tongue apply themselves to the spirit, and, aided by the unveiling of his real thoughts and affections accomplished by the angels of the teeth, they ascertain by their delicate perception whether his outward quality is good or bad, and whether or not his life is in agreement with the life of the Greatest Man. In this work they are greatly assisted by the angels of the nose and epiglottis,

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who perceive the more interior things in regard to the spirit's quality.

In the meantime, angels from the societies of the salivary glands, who possess a very full knowledge of the general and specific needs of the Greatest Man, come to the spirit and instruct him as to the needs of heaven. They must inform him that the whole Heavenly Man desires new members, and that every one who has lived a good life on earth from spiritual principles is needed to build up and to perfect the various heavenly societies; and they no doubt encourage the newcomer further by telling him some of the specific needs of the Greatest Man which he will probably be able to supply. By thus showing them that there is a place in heaven for all who have lived a good life, these angels facilitate the entrance of new spirits into heaven, whether they are taken up directly into the societies of the blood-vessels or go through the œsophagus into the stomach. By such instruction, too, they make delightful to the new spirits the satisfaction in useful works which they bring with them, and this is like the partial conversion by the saliva of the starch of food into sugar.

By the instruction of the salivary angels, the newcomers are partially prepared for the passage to the world of spirits, which is the stomach of the Greatest Man[1]; and the first stage of such

[1] *Apocalypse Revealed*, 791.

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passage is like the act of swallowing food. But should any spirits wander in other than the appointed direction, and seek to ascend into the societies of the nose, the angels of the anterior palatine arches come to them, and inquire what they wish and what is their business there, and they are told by angels of the uvula that it is not permissible to go in that direction, and their proper way is explicitly pointed out to them; and if they still persist in their attempt, further progress is effectually barred by the angels of the posterior palatine arches, who unite with the angels of the uvula in completely blocking the way.

The final preparation of new spirits in the region of the mouth is accomplished by the societies of the tonsil glands. Angels from these societies come to the spirits, and instruct them as to the general condition of affairs in heaven, and what they have to expect there. These angels may also give to spirits, so far as they are able to do so, information as to the whereabouts and state of departed friends. In fact the tonsil societies may be regarded as a sort of bureau of information for spirits who first enter heaven.

In his posthumous treatise on *The Last Judgment*, Swedenborg gives an account of the instruction of novitiate spirits by angels who were appointed for that task, and who evidently represent the tonsil glands; for these angels

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listened to the different ideas of the spirits concerning the state of the soul after death and the nature of the spiritual world, and then gave them true information about the after-life and heaven, instructing them in regard to the spiritual sun, and showing them how evil spirits at that time, by reason of their intermediate position between heaven and the natural world, were perverting the flow of the Lord's truth through heaven to men on earth.[1] By such instruction these angels make known to new spirits the general condition of affairs which they may expect to meet in the spiritual world, and they thereby facilitate, like the secretion of the tonsils which lubricates the passage of food, their entrance into the world of spirits.

After experiences like these in the province of the mouth, the new spirits pass through the societies of the pharynx, and enter the œsophagus of the Greatest Man.

[1] *Spiritual Diary*, part vii., pp. 125–133.

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THE ŒSOPHAGUS AND THE STOMACH

THE œsophagus is a muscular tube, made up of three coats, which extends from the pharynx to the stomach. Its function is to convey food into the stomach; for food does not fall of its own weight into the stomach, but is carried along thither by successive contractions in the walls of the œsophagus, so that it is possible to eat and to drink with the head lower than the stomach. Even in the case of liquids and small mouthfuls of solid food, which are often carried down to the stomach by the force of the act of swallowing alone, the œsophagus contracts after the food has passed, as if to make sure that nothing is left behind, and thrusts into the stomach any morsels of food remaining in its tube.

The stomach is a muscular bag, joined to the tube of the œsophagus by the cardiac orifice at its larger end, and opening into the intestines through the pyloric orifice at its smaller end. It is composed of three coats,—the mucous, muscular, and fibrous coats; and the inner surface of the mucous coat, which is the inside coat of the

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stomach, is covered with numerous glands, which constitute the larger part of its structure. These glands are of two varieties, the cardiac and the pyloric, and they secrete the gastric juice. Hydrochloric acid, which is one of the constituents of the gastric juice, is supposed to be secreted by the parietal cells of the cardiac glands.

The chief functions of the stomach are to provide a receptacle for the food until it can be taken up for final digestion and absorption by the intestines; to mingle thoroughly the gastric juice, which it secretes, with the food; and to absorb such substances as are ready for absorption. The stomach receives the mass of food from the œsophagus, and by the movements of its muscular coats presses and squeezes it together, passes it to and fro in a more or less regular current, and pours its gastric juice over it until the whole mass is reduced to a soup-like consistency known as chyme. It then absorbs such portions of the chyme as are ready for absorption, and propels the remainder through the pyloric orifice to the intestines. The gastric juice has no direct action on the starchy, sugary, and fatty materials of food, but dissolves only the proteid elements, which are absolutely essential for the building up of the tissues of the body and for the maintenance of its life.

Swedenborg states that the peristaltic motion of the stomach is synchronous with the alternate

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respiratory motion of the lungs, and that both the œsophagus and the stomach are under the government of this pulmonary motion. It is also his idea that the functions of the parts of the stomach resemble those of the whole stomach, and that by their penetrative activity these lesser stomachs set free the inner essences of the food, and absorb them through appropriate pores.[1]

The œsophagus corresponds to the love of an immortal life in the spiritual world. As, in its lowest form, such a love becomes a desire for the mere continuation of life, the appropriateness of this faculty to act as the œsophagus of the human body is apparent; for the function of the œsophagus is to convey to the stomach the food which is absolutely necessary for the maintenance of life.

The œsophagus also corresponds to the longing for the spiritual world and heaven as the goal of human existence and as the haven from earthly ills, which is one of the aspects of the love of an immortal life in the spiritual world.

The stomach corresponds to the faculty of communication with spirits from the other world. Its mucous coat corresponds to the reception of spirits and of the things of the spiritual world, its muscular coat corresponds to thoughts about spirits and the things of the spiritual world, and its fibrous coat corresponds to knowledge concerning spirits and the things of the spiritual

[1] *Animal Kingdom*, 99–104.

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world. The numerous glands imbedded in the mucous coat correspond to perceptions whether or not the apparitions seen are really spirits, the cardiac or fundus glands being perceptions as to whether they are spirits, and the pyloric glands perceptions that they are not spirits. These glands constitute nearly the whole structure of the mucous coat, because the reception of spirits depends largely upon the perception of the reality of their spiritual nature. If we do not believe the apparitions which we see to be spirits, we will have no inward receptivity toward them, and will place no credence in what they may say. The gastric juice secreted by the gastric glands seems to correspond to thought or instruction concerning what is spiritual and unspiritual, and the hydrochloric acid, which is the acid of common salt, seems to correspond to the truth that tests the spiritual claims of apparitions by showing whether their actions are in accord with their pretensions.

The same faculty that is used in coming into communication with spirits, and testing their spiritual nature, is exercised in ascertaining the spirituality or unspirituality of men; for we form our opinion of others' spirituality or want of it by coming into direct contact with them, by reflecting upon their ideas and statements, and by observing whether they live according to the truths which they profess. If we ourselves are

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spiritually minded, we welcome all others who prove to be of a similar nature, and receive them into our circle of friends; but those whom we perceive to be carnally minded we do not wish to receive and make members of our intimate circle, but we reject them from our society because of their want of spirituality.

It is just these mental processes that are reflected in the operations of the stomach; for the stomach receives the food tentatively, rolls it over and over in order to find and to liberate its interior essences, and then absorbs through its blood-vessels and lacteals such essential portions as are fit for reception, and rejects the remainder into the intestines.

The stomach digests and absorbs only the proteid elements of food, which alone are capable of nourishing and maintaining the life of the body; and this function resembles the action of the spiritual mind, which receives only the spiritual elements of truth, and absorbs them for the sustenance of its activities.

The physical indigestion produced by overloading the stomach with heavy food is akin to the mental indigestion occasioned by cramming the mind with a lot of external and natural knowledge, which depresses the spirits, and causes a temporary dislike for all knowledge.

Swedenborg speaks of gross spirits who produced excessive oppression in the region of the

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stomach, and who in the world had been addicted to mere pleasure, and had lived in ease and indolence devoid of any faith in spiritual things.[1] The great oppression which these spirits caused in the stomach was no doubt in consequence of their utter lack of spirituality, and their complete indifference to the wisdom and knowledge of a spiritual world, so that in their carnality they were more like animals than men.

It was enjoined in the Bible that the maw, or stomach, of the animal sacrifices should be part of the priests' due,[2] for spirituality is one of the special gifts of the priesthood.

In the Greatest Man of our earth, the œsophagus is represented approximately by German East Africa, and the stomach is represented by the land lying mainly east of the Nile River, comprising British East Africa, Somaliland, Abyssinia, Nubia, and Egypt.

In the Greatest Man of heaven, the societies of the œsophagus are the angels whose love of an immortal spiritual life is their strongest characteristic. It is among these angels that new spirits come after leaving the province of the mouth and pharynx, and they are doubtless taught here that they, like all other men, must die and put away their natural and outward selves and become spiritual beings, and they are also inspired with a love for immortal spiritual

[1] *Heavenly Arcana*, 5723. [2] Deuteronomy xiii., 3.

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existence, and with a longing for heaven and heavenly happiness. Under the influence of such instruction and desire they begin to hasten their steps along the œsophageal road. Here, too, they first feel the inspirational impulses of the heart and lungs of heaven, which must tend to awaken more spiritual states of mind in them. But the œsophagus of the Greatest Man is mainly a pathway to the stomach, which is the world of spirits proper, where new spirits assemble in vast numbers and form organized societies, and where they remain for periods not exceeding thirty years.[1]

The societies of the stomach of the Greatest Man are the angels who love to receive spiritual persons and things, and to perceive, think, and know what is spiritual. Hence they must possess a great deal of knowledge and wisdom in regard to the spiritual world in general, as well as a very keen perception of the spirituality or want of spirituality in those whom they meet. By these angels the new spirits are received, and are carefully examined as to their spiritual nature. No mere knowledge of spiritual things is accepted as a proof of spirituality, and these angels test the spiritual claims of all newcomers by ascertaining whether they have lived according to the spiritual truths which they learned in the world. The angels also give the new spirits plenteous instruction concerning what is truly spiritual. Such

[1] *Heaven and Hell*, 426; *Apocalypse Revealed*, 866.

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examination and instruction, like the action of the gastric juice upon food, have the effect of bringing out the interior thoughts and affections of spirits, and of clearly discriminating between what is spiritual and what is not spiritual in them.

Swedenborg tells us that there are three states which the generality of spirits undergo after death before they pass either into heaven or into hell; these are a state of exteriors, a state of interiors, and a state of preparatory instruction, all which are experienced in the world of spirits.[1] The first or exterior state, in which the spirit is in an external state of mind similar to that which he had in the world, lasts until he comes into the region of the stomach, where it is soon succeeded by the second state, in which he enters into the thoughts and feelings constituting his real internal life, which sooner or later throw off all external restraints to their outward expression, and exhibit the true nature of the spirit. Such change of state from external to internal must be largely the result of the influence and spiritual instruction of the angels of the stomach; for they live in an atmosphere of spirituality, and instruct Christians in doctrine received from heaven which is in entire agreement with the internal sense of the Word.[2] The state of preparatory instruction is experienced only by good spirits, for the evil

[1] *Heaven and Hell*, 491. [2] *Idem*, 516.

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reject all spiritual instruction. Swedenborg mentions several of the methods of instruction employed in the world of spirits, and gives the following characteristic instance of an examination of spirits in that world, which was made by angels, who probably represented the parietal cells of the cardiac glands, in order to determine whether the spiritual truths the spirits knew were united to a good life:

"There were spirits who, from their thought in the world, had persuaded themselves that they would go to heaven, and be received in preference to others, because they were men of learning, and knew many things from the Word and from the doctrines of their churches, believing that they were therefore wise, and that they were meant by those of whom it is said that 'they shall shine as the brightness of the firmament and as the stars' (Daniel xii. 3). But they were examined as to whether their knowledge resided in the memory or in the life. They who had a genuine affection for truth, thus for truth for the sake of uses separate from corporeal and worldly considerations, which in themselves are spiritual uses, were, after they had been instructed, received into heaven. It was then granted them to know what it is that is bright in heaven, and that it is in fact the Divine Truth, which is the light of heaven, embodied in use, which is the plane that receives the rays of that light, and turns it into various degrees of brightness. But they with whom knowledge resided only in the memory, and who had thence acquired a faculty of

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reasoning about truths, and of confirming the views which they had accepted as principles, which, although false, seem after confirmation like truths, these persons held the belief, owing to the pride which generally adheres to such intelligence, that they were more learned than others, and therefore would go to heaven, and that the angels would serve them. Therefore, in order that they might be withdrawn from their fatuous faith, they were taken up to the first or ultimate heaven to be introduced into some angelic society. But when they were in the very entrance, on receiving the influx of the light of heaven their eyes began to be darkened, their understanding grew confused, and at length they commenced to gasp for breath like men who are dying, and when they felt the heat of heaven, which is heavenly love, they began to be inwardly tortured. Wherefore they were cast down from there, and were then instructed that knowledge does not make an angel, but the life which is acquired by knowledge; since knowledge, regarded in itself, is outside of heaven, whereas the life acquired through knowledge is within heaven." [1]

If, after such examination and instruction, the new spirits are found to be true lovers of spiritual things and sufficiently detached from worldly ties to be ready to enter at once upon a life of heavenly happiness, they are warmly received by the angels of the stomach, and are guided by them to ways which lead heavenward through angelic societies; but if the new spirits, although

[1] *Heaven and Hell*, 518

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interiorly good, still cling to false ideas and carnal affections, they, together with all evil spirits, are rejected by the angels of the stomach into the intestinal societies because of their deficient spirituality.

In the stomach of the Greatest Man the separation of the good from the evil is begun, which is afterward carried on and completed in the province of the intestines; but comparatively few spirits are taken up into heaven from the stomach, for most persons require further discipline and purification in the lower earth of the intestines before they are fitted for heavenly life.[1]

[1] *Heavenly Arcana*, 4728.

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THE INTESTINES

THE intestines are muscular and membranous canals, much convoluted and corrugated, and resembling the stomach in their structure and peristaltic movements.

The intestines consist of the small intestine, which is long and narrow, and the large intestine, which is short and wide. The small intestine is divided into three parts, consisting of the duodenum, the jejunum, and the ileum. The duodenum communicates with the stomach through the pyloric orifice, and into the duodenum empties the common duct into which the cystic, hepatic, and pancreatic ducts converge, and which conveys to the intestines the bile from the gall-bladder and liver and the pancreatic juice from the pancreas. The ileum joins the large intestine at the cæcum, which is a wide intestinal pouch at the right side of the abdomen, and in which is situated the ileo-cæcal valve, guarding against any reflow of the contents of the large intestine into the small intestine. To the cæcum is attached the elongated process named the vermiform

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appendix. From the cæcum the large intestine passes upward, and is known as the ascending colon; it then turns at right angles and runs across the abdomen to the left side of the body, being called the transverse colon in this part of its course; next it bends backward and descends along the left side of the body, becoming the descending colon. The termination of the descending colon passes to the middle of the abdomen, where it merges into the rectum, the lower end of which opens externally through the anus. Hence the alimentary canal affords a continuous passage through the body from the entrance at the lips to the exit at the anus.

Throughout the intestines the mucous membrane is closely set with innumerable small glands, known as the glands of Lieberkühn. In the small intestine these glands are accompanied by minute elevations called villi; but in the large intestine the villi are absent, and the glands become twice as long. The cells of the glands and of the villi are of two kinds,—columnar and goblet cells. The columnar cells of the villi, and probably also of the glands, are concerned in the absorption of digested food; and the goblet cells, which in structure are practically the same as the mucous cells of the submaxillary gland, secrete mucus. The glands of the large intestine contain a comparatively large number of goblet cells.

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The general functions of the intestines are to receive the food after it leaves the stomach, to absorb all the remaining nutritious elements, and to reject from the body everything innutritious and worthless. The intestines receive the portions of the food which the stomach has been unable to dissolve and absorb, and treat the food with more vehemence and heat and with more delay than it experienced in the stomach. In the small intestine the treatment of the food or chyme is comparatively gentle, and a large proportion of the chyme is absorbed by the lacteals and blood-vessels of the small intestine; but when the unabsorbed and refractory chyme enters the large intestine, it experiences much harsher treatment, which increases in severity all the way from the cæcum to the rectum, although even here all the good particles of chyme which yield to these stern digestive forces, and become converted into assimilative products, are promptly absorbed and taken into the circulation of the blood. In the rectum the chyme, or fæces as it has now become, is treated with the utmost rigor, and a last residue of nutritive elements is wrung from it and taken up; while the hard, intractable portions which have withstood all digestive activities, and which are foul and worthless, are cast out through the anus as excrement.

In their functions of finally digesting, absorbing, and excreting food, the intestines have the

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assistance of the bile, the pancreatic and intestinal juices, and the action of minute organisms. The vermiform appendix also supplies a co-operating juice, which has the function of lubricating the folds of the colon and softening the mass of the fæces.[1]

While in the mouth only carbohydrates are digested, and in the stomach only proteid substances, in the intestines all three kinds of food-stuffs—carbohydrates, proteids, and fats—are digested and absorbed. By the action of the pancreatic juice, the effect of the saliva secreted in the mouth is continued, and most of the starch contained in food is digested by being turned into sugar, and the proteid substances which have been partly dissolved by the gastric juice are converted into assimilative products; and by the combined action of the pancreatic juice and the bile fatty materials are emulsified and saponified, and so are prepared for absorption. Besides its function of forming emulsions of oils or fats, the bile serves to precipitate the proteid substances in the chyme, and thus to separate them from impurities, and to preserve them for the action of the pancreatic juice.

The intestines correspond to several different faculties, which unite in the performance of a common function. The small intestine corresponds to the faculty of mercy; the duodenum

[1] *Animal Kingdom*, 138.

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being compassionate mercy, the jejunum mercifulness in general, and the ileum forgiveness and forbearance. The ileo-cæcal valve corresponds to the faculty which dictates that malefactors cannot be permitted to injure others with impunity, but that they must be restrained by suitable punishment. The cæcum corresponds to the faculty of determining the suitable punishment for a given offence. The vermiform appendix corresponds to the faculty of making a final effort to secure an amelioration of affairs before resorting to extreme measures. The ascending colon corresponds to the faculty of administering punishment, the transverse colon corresponds to the faculty of ridicule, the descending colon corresponds to the faculty of condemnation, and the rectum corresponds to the faculty of getting rid of disagreeable things.

The glands of Lieberkühn with their villi correspond to the faculty of accepting whatever is suitable for the purposes of the individual, the columnar cells corresponding to the acceptance itself, and the goblet cells corresponding to the knowledge of the requirements and purposes of the mind governing such acceptance. The comparatively large absorbing surface occasioned by the presence of villi in addition to the glands in the small intestine shows greater receptivity of the faculty here; while the greater depth of the glands in the large intestine, and the relatively

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large number of goblet cells present, indicate a more deeply critical receptiveness.

The bile, which is poured into the duodenum from the gall-bladder and the liver, seems to correspond to knowledge or instruction as to what is practicable, useful, and of good judgment; for the liver corresponds to concrete judgment or judgment as to what is good, and the gall-bladder corresponds to judgment from the standpoint of feasibility and utility. The pancreatic juice seems to correspond to knowledge or instruction as to the need of gathering all materials capable of being combined into one whole, for the pancreas corresponds to the faculty of synthesis.

These correspondences are in entire agreement with the functions of the intestines and their juices: for the faculty of mercy and forbearance operates gently and mildly like the small intestine, and is helpful in bringing out all the good qualities of others; while the faculties of inflicting punishment, ridiculing, condemning, and getting rid of unpleasant persons and things work much more harshly, and, like the large intestine, their activities serve rather to correct and reject what is wrong and evil than to stimulate what is good. But there is a limit to mercy and forgiveness, and the faculty which dictates that criminals and offenders must be punished for their misdeeds in order to be deterred from repeating them is like the ileo-cæcal valve, which prevents any reflow

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of the contents of the large intestine into the gentler province of the small intestine. The faculty of reflecting upon a suitable and adequate punishment for an offence is like the wide pouch of the cæcum, where the chyme may be detained for a time before being subjected to the rigorous treatment of the ascending colon. In its deliberations, the faculty represented by the cæcum receives the softening influence of the attitude of mind which is disposed to wait a little longer in the hope of an amelioration of affairs, and to make a final effort to correct abuses and affronts by rebuke or remonstrance before proceeding to the extreme measure of administering stern punishment; and such influence is like the lubricative and emollient juice which the vermiform appendix sends into the cæcum. The frequency of appendicitis, which is a disease of the vermiform appendix, shows how liable this faculty is to abuse and perversion; for many persons are unwilling to wait awhile for an amelioration of conditions and to make a final effort to correct and remove offences by the mild measure of remonstrance or rebuke, but wish at once to inflict due punishment upon the offender. Such a hard and wrathful spirit of retaliation must necessarily tend to produce its physical correlative in the inflammation and hardening of the vermiform appendix, with all the attendant disorders.

The same faculty that is represented in the

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body by the vermiform appendix appears in the brain as the hinder part of the vermiform process uniting the two hemispheres of the cerebellum, and is there associated with the faculty of getting rid of disagreeable things, which seems to form the forward part of the vermiform process, and which is represented in the body by the rectum. This is one of the cases in which the physical correspondential organs are arranged in a different manner from that of the correlative cerebral centres.

Similar exact analogies between mental and physical operations are afforded by the functions of the bile and the pancreatic juice. The proteid substances of food correspond in a general way to the essential elements of knowledge or truth, because proteids are the essential elements of food; carbohydrates, consisting of starches and sugars, seem to correspond to intellectual satisfactions and pleasures; and oils or fats seem to correspond to emotional enjoyments. The knowledge of the needs of the mind, like the saliva of the mouth, partially converts the starches of intellectual satisfactions into the sugar of intellectual pleasure by bringing these satisfactions into a living relation with the individual. The spiritual mind's discriminating knowledge of what is spiritual and unspiritual serves, like the gastric juice of the stomach, to distinguish and to appropriate the really spiritual and essential elements of truth.

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The judgment of what is good to do, and of what is feasible and useful, has the effect, like that of the emulsifying and precipitating action of the acrid and bitter bile, of separating the useful, practicable, and good enjoyments and suggested courses of action from those that are useless, impracticable, and evil. But digestive influences on all these kinds of truth and good are exercised by the effort of the mind, represented by the pancreatic juice, to gather materials from every quarter which are suitable for the upbuilding of the mind's purposes; for such an effort seeks to obtain every good element, whether essential or accessory, that can be combined into a unified whole.

All elements of mental food that respond to these mental forces, and become converted into assimilative products capable of nourishing the mind and of carrying out its purposes, are taken up by the faculty of accepting whatever is suitable for the mind's activities, mirrored by the glands of Lieberkühn and their villi, to be finally assimilated by the various mental provinces, and incorporated into their structure; whereas all elements which are incapable of really nourishing the mind, and the worthlessness of which has been fully shown by appropriate faculties, are, after rigorous handling, ridicule, and condemnation, gotten rid of by the mind as useless and unprofitable.

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Owing to the correspondence of the small intestine, the bowels are several times referred to in the Bible in connection with mercy, as in the following passages:

"My bowels yearn for Ephraim; I surely will have mercy upon him, saith Jehovah." [1]

"Because of the bowels of mercy of our God, whereby the dayspring from on high shall visit us." [2]

Swedenborg speaks of spirits who live for the sole end of enjoying a pleasant life as appearing in the other world like attenuated and bloody intestines [3]; for it is the function of the intestines to expose, discipline, ridicule, condemn, and reject whatever is worthless and foul, and a life of mere pleasure, since it clings to what is useless and vile, wastes and abuses such a function, and prevents it from properly performing its duties. He also says that cruel and adulterous spirits delight in filth and excrement and in beholding foul intestines.[4] Such evil delight may be due to the fact that cruelty is the perversion of the faculty of just punishment represented by the ascending colon, and the filthy contents of the intestines are like their foul adulterous passions. Inhabitants of the colon, intestine, and rectum,

[1] Jeremiah xxxi., 20. [2] Luke i., 78.

[3] *Spiritual Diary*, 3137; see also *Lesser Spiritual Diary*, 4680.

[4] *Heavenly Arcana*, 5394; *Spiritual Diary*, 2843.

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both evil and of a better sort, are described as spirits of great savageness, delighting in battle and bloodshed, and loving to kill and destroy. As the ascending colon corresponds to the love of inflicting punishment, and the rectum to the love of getting rid of unpleasant persons, it is not difficult to understand why those who constitute these provinces should possess so violent a nature.

In the Greatest Man of our earth, the small intestine is represented by Mexico, the peninsula of Lower California representing the duodenum, the northern part of Mexico the jejunum, and the southern part of Mexico as far as the Isthmus of Tehuantepec the ileum. The cæcum is approximately represented by Guatemala, and the ileocæcal valve is represented by the territory between the Isthmus of Tehauntepec and Guatemala. The vermiform appendix is represented by the southern half of the Isthmus of Panama. The ascending colon is represented by the peninsula of Yucatan, the transverse colon by Nicaragua, the descending colon by Costa Rica, and the rectum by the northern half of the Isthmus of Panama.

In the Greatest Man of heaven, the societies of the intestines are the angels who are charged with the final separation of good from evil spirits, and with the acceptance of all the good and the rejection of all the evil.

The angels of the small intestine surpass all

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others in mercy, forbearance, and forgiveness. With tender compassionateness they receive the spirits, both good and bad, who come to them from the province of the stomach, and strive by kind exhortation and gentle urging to induce them to give up their false ideas and evil ways. No doubt these angels are often rebuffed and insolently treated in their merciful mission by the spirits who come to them, many of whom are in evil, and all of whom are more or less attached to carnal feelings and thoughts which they are loath to part with; but the angels never retaliate the rebuffs and incivilities to which they are subjected, enduring them with a forbearing and forgiving spirit, and seeking to separate from their evil companions all good spirits who are willing to be led into heavenly ways. In this work they are greatly assisted by the angels of the cystic, hepatic, and pancreatic ducts, who have very decided opinions and love to administer sharp instruction to others [1] in regard to what is good, useful, and capable of becoming an organic part of heaven, and also what is bad, useless, and incapable of heavenly incorporation. By their sharp instruction and correction the evil are separated from the good, and the good are prepared for reception into heaven. In addition to such instruction, the tender mercifulness and gentle forbearance with which the angels of the

[1] *Heavenly Arcana*, 5185.

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small intestine endeavor to free spirits from their evil and false ways tend to bring out all their good traits, and to lead them to discard whatever prevents their entrance into heaven. It is no wonder, therefore, that most of the good spirits are taken up in this province; and numerous societies of the villi and intestinal glands stand ready to receive them and to introduce them into heaven, if they answer the requirements and are suited to the purposes of the Greatest Man.

The spirits who come from the stomach of heaven into the province of the small intestine are all the spirits who are evil, and also many spirits who at heart are good and charitable, but have some confirmed falsity or gross affection still clinging to them, or are bound by personal attachment to spirits who love an evil life and the false doctrines permitting it.

All the good spirits who are susceptible to the merciful goodness and discriminative instruction which they receive in the province of the small intestine, and relinquish their false ideas and their friendships for the wicked, pass into the societies of the lacteals for distribution into the various provinces of heaven, or else are received by the societies of the portal blood-vessels to be sent to the province of the liver for further purification. But all evil spirits, and even some spirits who are inwardly good, resist such gentle influence and purifying instruction, and refuse

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to give up their evil enjoyments, their confirmed falsities, or their personal attachments; and these spirits are delivered to the societies of the large intestine for severe discipline and correction.

Here the scene suddenly changes. Instead of the merciful treatment and kind forgiveness which spirits had received at the hands of the angels of the small intestine, their continued offences against others are no longer tolerated, but are met with stern repressive measures. After the angels of the vermiform appendix have made a last effort by warning or admonition to induce them to relinquish their perverse ways, the angels of the cæcum determine the suitable punishment for their offences, and hand them over for punishment to the angels of the ascending colon, who love to inflict just punishment upon offenders for the sake of reform. Even the societies of the intestinal glands, whose function it is to take up into heaven every spirit possessing good life, become more circumscribed and more critical than in the province of the small intestine; for they have now to deal with numerous evil spirits and comparatively few good ones, and it is necessary for them carefully to exclude the evil, as they are utterly unsuited for the activities and growth of the Heavenly Man.

The spirits upon whom just punishment makes no corrective impression are next sent into the transverse colon, where their false ideas and carnal

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attachments are derided as absurd, and become the butt of caustic ridicule, in which the angels of the transverse colon specially delight. The crowd of spirits afterward throng into the descending colon, where the angels sternly condemn and vehemently denounce their evils and falsities. Finally, the spirits pass into the rectum, where the evil are gathered together; and whenever some unusual outbreak of wickedness on their part presents a suitable opportunity, they are promptly gotten rid of by the angels of the rectum and cast into hell.

Good spirits who at length turn away from their wicked associates, whose loathsome natures are now so thoroughly exposed, and after much suffering discard their perversely false ideas, are taken up into heaven all along the course of the intestinal societies, until, when the rectum is reached, scarcely any good persons remain among the fæcal mass of evil spirits; but even here, almost at the very gates of hell, a residue of tortured spirits is wrested from their evil companions and taken up into heaven, in order that not a single soul possessing any capacity for heavenly life may be lost. In fact, we are told that there are spirits "who have lived an evil life, and yet have some remains of good concealed in them. These remains cause them to have a little spiritual life after many ages of vastations."[1]

[1] *Heavenly Arcana*, 5561.

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THE LIVER, THE KIDNEYS, AND THE BLADDER

THE liver is a broad, glandular organ, the largest in the body, and is situated mainly on the right side of the abdomen immediately under the diaphragm. Lodged in the under surface of the liver is a pear-shaped sac, named the gall-bladder, and running across its outer surface is a crescent-like ligament, called the broad or falciform ligament, which connects the liver with the abdominal wall.

The functions of the liver are varied and important. In addition to secreting the bile, which assists the pancreatic juice in digesting food and rendering it fit for absorption, the liver separates from the blood such matters as need to be expelled, and it also purifies and renders assimilable the crude products of digestion brought to it from the stomach and intestines by the portal vein along with the ordinary venous blood from these regions. The stream of bright arterial blood dispatched from the heart and the portal stream of dark venous blood containing the digestive pro-

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ducts of the alimentary canal are both mingled together in the liver, and are carefully sifted and purified, and the resultant fluid is then divided into three portions; the enriched and purified blood destined for the heart is sent forward through the vena cava, the purified and duly prepared products of digestion are remitted through the lymphatics to the receptacle of the chyle,[1] and the impurities extracted from the blood are discharged along with the bile into the intestines, where they become part of the fæces. Besides these functions, the liver furnishes glycogen, a starchy substance which is stored up in the liver until needed by the system, when it is converted into sugar and carried by the blood-vessels to the various parts of the body, and is then combined with oxygen to produce heat and to assist in the production of muscular movements.

In current physiology, the gall-bladder is regarded as merely a reservoir for the hepatic bile during the intervals between digestive activity in the intestines; but it is evident that the gall-bladder has other functions besides storing up the hepatic bile, for the bile formed by the liver is a thin fluid, but after its stay in the gall-bladder it is thick and viscid from the secretions of the cells lining the gall-bladder. Swedenborg assigns a very different function to the gall-bladder, which in his view receives from the liver, through

[1] *Animal Kingdom*, 212.

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appropriate blood-vessels, the impure and useless blood which the liver is unable to correct and purify, and subjects such effete and intractable blood to rigorous treatment similar to the action of the large intestine upon the feculent residues of food. He considers that the gall-bladder derives its bile, not from the bile of the liver, which is different in nature and origin, but from the excrementitious blood of its own arteries, and that it merely summons the hepatic bile to act as a solvent in the ultimate defecation of the blood effected in the gall-bladder.[1]

The kidneys are two bean-shaped glands, of complicated structure, placed one on each side of the spinal column. The general function of the kidneys is to eliminate from the blood, in addition to a large quantity of its watery element, the injurious materials which when dissolved in the water constitute urine.

On the upper end of each kidney lies a small, flattened organ called the suprarenal capsule or adrenal. Very little is known in regard to the functions of the suprarenal capsules, but their close anatomical relationship to the kidneys indicates that they render special service to these organs. The removal of the suprarenal capsules in animals produces extreme muscular weakness, and death speedily ensues; similar muscular weakness is caused in man when these capsules are

[1] *Animal Kingdom*, 215; also note x.

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diseased. It is therefore considered probable that the adrenals secrete into the blood a substance or substances which are very beneficial to the body, especially to the muscular system.

The ureters are two membranous tubes which convey the urine from the kidneys to the bladder. Along their course are veins and lymphatics which have the function of taking up any good materials left in the urine and restoring them to the blood.[1] The urinary bladder is a distensible bag, lying within the pelvic cavity, which acts as a temporary reservoir for the urine brought to it by the ureters. Whenever a considerable quantity of urine accumulates in the bladder, it forcibly contracts, and expels the urine into the urethra, which is a muscular canal serving to carry the urine from the bladder to the exterior of the body.

All the foregoing organs correspond to closely related parts of the same faculty,—the faculty of judgment. In a general way the liver corresponds to judgment as to what is good or judgment what to do; the gall-bladder, to judgment as to what is feasible and useful; the falciform ligament, to decision; the kidneys, to judgment as to what is true; the suprarenal capsules, to the gathering of the data necessary to form a true judgment; the ureters, to determining whether any essential point or factor has been neglected in the

[1] *Animal Kingdom*, 291, 292.

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formation of a judgment; the urinary bladder, to the collection of information as to the opinions reached by the judgment; and the urethra, to refusing to re-open a question which has been settled after careful examination and deliberation.

These correspondences are clearly reflected in the physiological functions of the above organs, which are similar to the mental functions they portray, and have a similar relationship.

The liver and the kidneys perform a similar use in the body, for the primary function of both is to purify the blood. The matter which is voided by the intestinal canal, being mainly solid, corresponds in general to evils; while the matter discharged by the urinary canal, being mostly liquid, corresponds to falsities. The excrementitious substances which the liver separates from the blood are thrown into the intestinal canal, because the liver purifies the blood of its evil things; whereas the poisonous impurities eliminated from the blood by the kidneys are poured into the urinary canal, because the kidneys purify the system of false things. Moreover, both the liver and the kidneys exert a powerful influence upon the muscular activites of the body,—the liver through its glycogen, and the kidneys through the secretions of their suprarenal capsules; and both liver and kidneys are concerned with the production and excretion of urea. Hence the physiological, as well as the correspondential, con-

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nection between the liver and the kidneys is apparent. The falciform ligament keeps the liver in position and at work, the suprarenal capsules make it possible for the kidneys to perform their functions, and the urinary canal, consisting of ureters, bladder, and urethra, serve to convey the excretions of the kidneys to the exterior. Consequently all these organs and tissues stand in close physiological relationship, which typifies their correspondential connection.

Judgment as to what to do and as to what is good purifies the mind of its obscurities and evils just as the liver purifies the blood; for such a faculty rejects all plans and impulses which are contrary to good judgment, and so clears the mind of foolish and harmful projects. The function of the liver in storing up glycogen, which it converts as needed into sugar and forwards to the several parts of the body to produce heat and muscular movements, is mirrored in the mental operations of the judgment, which, after reaching satisfactory conclusions as to what it is best to do in regard to various problems, sends forth these judgments to form the basis of the outward actions of the individual; and these actions are performed with pleasure and zeal, which are like the sugar and its resultant heat, because their wisdom has already been carefully determined, and the individual has now to attend only to their actual execution. Again, the receptive

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activity of judgment what to do resembles the liver's function of assimilating the crude products of digestion; for such judgment receives, adopts, and renders ready for incorporation whatever new ideas it considers wise and good. So, too, judgment founded on practicability and utility purifies the mind from a dense mass of fantastic, unfeasible, and useless ideas and suggestions in the same manner that the gall-bladder acts as the ultimate defecator of the impure blood.

The habit of decision tends to keep the faculty of concrete judgment at work until a decision is reached; and similarly the falciform ligament connects the liver with the abdominal wall, and thus helps to keep it in position that it may perform its functions.

Abstract judgment, or judgment of what is true, clarifies the mind in the same way that the kidneys purify the blood, since it discards every opinion which in its view is incorrect and false. But no judgment of any value can be formed without a full knowledge of the facts in regard to a case, and therefore the gathering of the data necessary to form a correct judgment is as essential to the faculty of judging what is true as the suprarenal capsules are necessary for the proper performance of the uses of the kidneys. The tonic and vital influence which these capsules exercise upon the kidneys and the muscular system of the body finds its parallel in the fact that

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it is impossible to judge rightly and act intelligently in any matter without a knowledge of the facts relative to it; and when such knowledge and the capacity to acquire it are absent, as they representatively are when the suprarenal capsules are removed, a great prostration of the forces of judgment and action must necessarily ensue, and finally the ability to judge and act at all must cease.

The determining whether any essential point has been omitted in forming the judgment serves, like the physiological action of the ureters with their attendant veins and lymphatics, to strain carefully the propositions which have been condemned, and to convey them, if no essential factor has been neglected, to the region of the mind answering to the urinary bladder, where the opinions formed by the judgment become mere matters of knowledge stored up by the mind. But if it is found on examination that any essential or important point has been omitted in the judgment, the case in question is returned for reconsideration. As the mind is continually forming fresh judgments, it is evident that the knowledge of the new cases will crowd out the old particulars, which are dismissed from the mind just as the urine is emptied from the urinary bladder. The refusal to reconsider any case which has already been fully considered and decided acts, like the urethra casting out the urine,

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to dispose finally of all questions which have been thoroughly judged.

Probably because a healthy liver was taken to mean that it was good judgment to do a contemplated action, the liver of animals was much employed in ancient times for the purpose of divination; as, for instance, by the king of Babylon, who stood at the parting of two ways and looked into the liver.[1] We frequently read in the Bible that the Lord tries and searches the heart and the reins, and this means that He explores and knows the character of man's inspirational emotions and intellectual judgments, and hence his whole emotional and intellectual nature[2]; and when the Psalmist says that his reins instruct him in the night seasons,[3] his words signify that his judgment of truth corrects and enlightens his mind in states of obscurity.

In the Greatest Man of our earth, all the above-mentioned attributes of judgment are represented by Great Britain and Ireland. The liver is approximately represented by the western part of England, and especially by Wales; the gall-bladder is represented by the southwestern peninsula of England situated west of the third degree of longitude. The falciform ligament is represented by the Isle of Man. The kidneys are represented approximately by the eastern

[1] Ezekiel xxi., 21. [2] *Heavenly Arcana*, 5385.
[3] Psalms, xvi., 7.

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part of England, and the suprarenal capsules are represented approximately by Scotland. The ureters are represented by the Orkney Islands, the bladder is represented by Ireland, and the urethra is represented by the Shetland Isles.

In the Greatest Man of heaven, the societies of the liver and gall-bladder are the angels who are wise in determining what it is good judgment to do, and what is practicable and useful. Hence these angels reject all visionary, useless, and hurtful plans and courses of action proposed to them, and so purify the whole heaven from many useless and perverse ideas which are preventive of true spiritual progress. Their wise conclusions of what it is best to do are sent forth, like spiritual glycogen, to the angels constituting the muscular system of the Greatest Man, and become the basis of their actions in many affairs requiring the exercise of careful judgment. In this way these angels are untrammelled by uncertain deliberations, and are free to perform their activities with the pleasure and zeal begotten of the conviction of the wisdom of the projected measures.

The angels of the liver have also the very important function of purifying and training the new spirits who come to them through the societies of the portal vein.

There are two general ways through which spirits are taken up into heaven from the provinces

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of the stomach and intestines, one through the societies of the lacteals and lymphatics, and the other through the societies of the portal vein and its tributaries. Owing to the large amount of fatty particles present in the lacteals, it seems probable that the spirits who are taken up into heaven through the lacteal societies are they who are already in the enjoyment of good life, and who have been sufficiently purified by their experiences in the stomach and intestines to enter upon a life of heavenly activity as soon as their different capabilities can be ascertained, and their distribution to their respective societies accomplished. The spirits, on the contrary, who are sent to the province of the liver through the portal vein seem to be those who require further purification and training before they are fully fitted for heavenly living; and it seems likely that such spirits, after their instruction and purification in the province of the liver, are conveyed through lymphatic societies to the thoracic duct of heaven to be duly distributed from there. It is possible, however, as Worcester thinks,[1] that some of these purified spirits enter the societies of the blood-vessels directly from the liver, thus representing in part the stream of purified blood flowing from the liver to the heart through the vena cava: but Worcester's view, that the new spirits who come to the liver through the portal

[1] *Physiological Correspondences*, pp. 93–95.

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vein are more in a life of goodness, and the new spirits who enter the lacteals are more in a life of truth and the good life which truth teaches, is doubtful; for it is not likely that new spirits would be sent to the province of the liver unless they needed further purification than they received in the stomach and intestines of the Greatest Man, and consequently such spirits would be less good, if anything, than the lacteal spirits who need no additional purification.

When the new spirits enter the province of the liver and gall-bladder, the crude, useless, and distorted ideas and habits which they bring with them are broken up and clarified by the instruction received from the angels of this province, and they are taught the real meaning and purpose of human and heavenly life, and are instructed what manner of deeds are required of those who would become angels. Purified by this wise and useful instruction, and prepared at last for their heavenly existence, they are sent forth rejoicing to the lymphatic societies, there to be sorted according to their capacities, and afterward to be distributed by the angels of the thoracic duct to their heavenly homes; or it may be that they enter the heavenly circulation directly from the liver, and so come in due time to their own societies.

Worcester attempts to locate in the province of the liver certain places of instruction in the

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other world,[1] but Swedenborg's explicit statement that the state of instruction of good spirits takes place in the province of the stomach, which is the world of spirits,[2] strongly militates against such an identification; and besides the instruction described as given there is instruction in spiritual goods and truths, and in the distinction between what is spiritual and what is material, and such spiritual instruction is more appropriate to the stomach as the province of the perception and knowledge of spiritual things than to the liver as the province of judgment as to what is good to do and what is practicable and useful.

Swedenborg speaks of the gentle gyres of the province of the liver, whereby things discordant are removed from the minds of new spirits, and harmony and unanimity are produced among them, which operation is like the purification of the blood by the liver from impure and discordant elements.[3] He says, also, that the angels constituting the gall-bladder are such as have despised and discredited what is honorable and pious, and describes a kind of vexation in that province, by which slow spirits are initiated into greater quickness of thinking and speaking.[4] The quickening influence of the angels of the gall-bladder may be due to the tendency of the faculty they

[1] *Heaven and Hell*, 513–520.
[2] *Idem*, 512, 516; *Apocalypse Revealed*, 611, 839.
[3] *Heavenly Arcana*, 5182, 5183. [4] *Idem*, 5186, 5187.

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represent to direct the mental energies to outward activity, and hence to use; and spirits who are slow and sluggish in their habits of thinking and speaking could scarcely help being accelerated by such energetic direction of their thought and knowledge to outward and useful activity. The reason for these angels having despised in the life of the body what is honorable and pious lies perhaps in the fact that such a faculty is apt to judge the value of everything from the standpoint of personal use and advantage.

The decisive angels of the falciform ligament exert a beneficial influence upon the societies of the liver, for they induce them to reach promptly and to express firmly their decision upon any debated question.

The angels of the suprarenal capsules gather the data necessary for the mental operations of the angels of the kidneys, and they also supply to the angels of the muscular system the knowledge which is needful for their intelligent action. Swedenborg states that the province of the suprarenal capsules is constituted by chaste virgins, who love heavenly thoughts, who draw to them the purer things of mentality, and as it were transmit them, although seeming to themselves to retain them, and who belong to this province because they detain the mind in certain things, so that the obscurities from which the mind is to be purified arise and manifest themselves in a

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coherent series, the removal of which obscurities produces a clearer view and influx, and causes the interiors to become more open to heaven.[1] The fixity of thought here described would certainly be characteristic of a faculty which is intent upon gathering adequate data upon a subject, which moreover are not merely stored up in the memory, but are transmitted for the purposes of judgment and intelligent action; and as the faculty represented by the suprarenal capsules seeks to learn the facts and circumstances bearing on a case, and is unwilling that judgment should be passed without a knowledge of the data necessary to form true judgment, it is apparent why the angels of this province should have the power to remove obscurities from the mind; for they are able, by communicating to others their true knowledge of a matter, to remove much inward misapprehension and ill-founded judgment.

The angels of the kidneys, ureters, bladder, and urethra perform a use in the Heavenly Man similar to that of the angels of the liver, the gall-bladder, and the intestines; but they discern and reject incorrect and false ideas rather than gross and evil habits. Probably a large part of their work is of an abstract character, and consists in purifying the heavens from erroneous ideas; but they also have an important function in rejecting from heaven all spirits whose presence would be in-

[1] *Heavenly Arcana*, 5391; *Spiritual Diary*, 962, 966, 969.

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jurious to the heavenly societies. Swedenborg tells us that there are two general ways to hell, one through the intestinal societies, and the other through the urinary societies; and it seems likely that the spirits who are cast out by the intestinal angels are they who are in evil and the resultant falsities, while the spirits who are rejected by the urinary angels are they who are in falsity and the evils which falsity teaches. Such false spirits, who have succeeded in hiding their falseness from the intestinal societies, and so have escaped rejection by them, are admitted into heaven along with the good spirits who are taken up from the intestines; but their false and discordant nature is quickly discovered by the angels of the kidneys, and they are promptly cast out as urine by the urinary societies.[1]

The angels of the ureters have the duty of ascertaining whether any essential point has been omitted in the judgments formed by the angels of the kidneys; and if so, they return the matter to them for reconsideration. But if no essential factor has been neglected, they acquiesce in the judgment reached. Hence these angels point out defective judgments in the case of any spirits who have been unfairly condemned by the angels of the kidneys, sending them back by the way of the venous or lymphatic societies for further examination in the light of the previously unconsidered

[1] *Heavenly Arcana*, 5387–5390.

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evidence; but they remove from the province of the kidneys, and convey to the bladder, all false spirits whose judgment has been justly pronounced.

The angels of the bladder collect the results of the judgments of the societies of the kidneys and ureters, and store up a fund of information in regard to them. They also receive the false and unclean spirits whose judgment has been pronounced and confirmed by the angels of the kidneys and ureters; and when the accumulated number of such spirits becomes unwieldy, they eject them into the societies of the urethra.

The angels of the urethra complete the work of the foregoing urinary societies; for they refuse to reconsider the just judgments which have been passed, and so discard for good all false ideas. They also reject firmly and permanently the false and fraudulent spirits who have been turned over to them by the angels of the bladder.

Swedenborg informs us that they who constitute the province of the kidneys, ureters, and bladder in the Greatest Man delight in dispelling falsities from truths, and are fond of exploring the minds of others in order to find occasion to condemn and to correct:

"The spirits who form the kidneys are they who wish to dispel falsities from truths, and thus to purify spiritual things."

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"They who constitute the province of the kidneys, ureters, and bladder in the Greatest Man are of such a genius that they like nothing better than to explore and search out the quality of others, and there are also some who desire to chastise and to punish, if only there is some justice in it. The functions also of the kidneys, ureters, and bladder are such; for they explore the blood thrown into them to see if there is any useless and hurtful serum there, and they also separate it from the useful, and afterward chastise it, for they drive it down toward the lower regions, and in the way and afterward they agitate it in various ways. These are the functions of those who constitute the province of the above parts. But the spirits and societies of spirits to which the urine itself, especially fetid urine, corresponds, are infernal; for as soon as the urine is separated from the blood, although it is in the little tubes of the kidneys, or within in the bladder, still it is out of the body, for what is separated no longer circulates in the body, hence it contributes nothing to the existence and subsistence of its parts. I have often observed that they who constitute the province of the kidneys and ureters are quick to explore and search out the quality of others, what they think and what they will, and that they are in the desire of finding occasion to condemn, for the end especially that they may chastise; and I have spoken with them concerning that desire and end. Many of that kind, when they lived in the world, were judges; and they then rejoiced in heart when they found cause, which they believed to be just, to fine, chastise, and punish. The operation of such is felt at the region of the back,

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where are the kidneys, ureters, and bladder. They who belong to the bladder extend themselves toward hell, where also some of them sit as it were in judgment." [1]

[1] *Spiritual Diary*, 3679; *Heavenly Arcana*, 5381, 5382.

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THE SPLEEN AND THE PANCREAS

THE spleen is a sponge-like gland situated on the left side of the abdomen under the diaphragm. The functions of the spleen are very obscure, and none of the views on the subject have as yet been thoroughly established. Inasmuch as the blood of the splenic vein contains more white corpuscles than that of the splenic artery, it is inferred that white corpuscles are produced in the spleen, and hence that the spleen has a functional relationship to the lymphatic glands. Owing to the large size which the spleen attains toward the end of the digestive process, when there is a great increase of granular albuminous plasma within it, and a subsequent gradual decrease of this material, it is thought that the spleen is concerned in storing up some of the proteid food which has been absorbed, the same being gradually introduced into the blood according to the demands of the general system. It was supposed by older physiologists that the spleen destroys the effete red corpuscles of the blood, but this opinion is now largely abandoned;

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and in fact Swedenborg contends that the spleen has no power to destroy the corpuscles of the blood, but only to separate those adhering together.[1] A more recent view on the subject is that new red corpuscles are formed in the spleen. Swedenborg's theory is that the main use of the spleen is to draw off the impure blood, and break it up and prepare it, so that it may serve the liver for its office of purification, and as a solvent for refining the chyle. Hence its principal function, in his opinion, is to produce a free and lively blood by separating all the mischievous coagulations and accretions contained in the arterial blood received through the splenic artery.[2]

The pancreas is a long gland, of soft structure and lobed appearance, which lies across the posterior wall of the abdomen, with its left end touching the spleen and its right end resting in the curve of the duodenum. The large pancreatic duct runs along the middle of the pancreas, receiving on its course many tributary ducts, and it makes a juncture with the common bile duct just before piercing the wall of the duodenum.

The most obvious function of the pancreas is the secretion of the pancreatic fluid for the purposes of digestion, but it has other important uses. If the pancreas is removed from an animal, a large quantity of sugar speedily appears in the urine, and the animal wastes away. The same

[1] *Animal Kingdom*, 246, note k. [2] *Idem*, 244, 246.

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condition is often observed in man, when it is known as diabetes, and in some cases of diabetes the pancreas is found to be diseased. As these symptoms are not caused by the loss of the pancreatic fluid proper to this organ, it is probable that the pancreas, by means of an internal secretion, plays some important part in the nutrition of the body.

The splenic vein, which returns the blood from the spleen, receives also small veins from the pancreas, and the blood from both these organs is conveyed through the portal vein to the liver for treatment.

Although they are placed in juxtaposition and exert a mutual influence over each other, the spleen and the pancreas really correspond to opposite faculties; for the spleen corresponds to the faculty of analysis, while the pancreas corresponds to the faculty of synthesis.

Their physiological functions give evidence of such correspondence. It is the nature of the analytical faculty to break up and separate things into their component parts, and this mental proclivity is mirrored in the function exercised by the spleen of breaking up and resolving into simpler elements the adhesions contained in the blood. The same analytical tendency is displayed in the production of white, and perhaps red, corpuscles by the spleen, which no doubt results from division rather than creation. A

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similar multiplication of the white corpuscles takes place in the lymphatic glands, for these glands differentiate the corpuscles according to their respective capabilities and functions. It is also an attribute of analysis to study a troublesome situation analytically, and then form a plan of procedure that will obviate the difficulties of the case; and such plan regulates the course of action in future occurrences, and is put into operation whenever any of the circumstances for which it was framed arises. This aspect of the analytical faculty may be represented by the spleen's alleged function of storing up some of the absorbed proteid food, and introducing it into the system as needed.

On the other hand, it is the nature of the synthetical faculty to gather a wide range of trustworthy facts bearing on a subject, and then to construct these facts into a coherent system by originating a theory which will interpret them all. Such mental operations are portrayed in the functions of the pancreas; for it sends forth the pancreatic juice to gather and digest all the good materials of food contained in the intestines, and when the uncombined mass of digestive products is brought to it in the stream of arterial blood, it doubtless supplies the cohesive secretion necessary to unite all these separate and incoherent elements into a form capable of being received and built up into the system. Loose, uncon-

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nected facts are not capable of being assimilated by the mind until they have been reduced to order and system by a general theory explaining them, and the function exercised by the pancreas of controlling the nutrition of the body seems to represent this mental nutritive power of synthesis.

The secreting cells of the pancreas contain numerous highly refracting granules, which are precursors of the secretion. At the beginning of digestion these granules disappear, but afterward the zone occupied by them increases to such an extent that it fills nearly the entire cell. The meaning of this phenomenon seems to be that the first granules represent the facts already possessed by the mind, which the faculty of synthesis acts upon in the effort to form a general theory which will construct the facts into an organic system; but the mind usually requires additional pertinent facts in order that it may view the subject in its entirety, and form a comprehensive and reliable theory, and this reaching out for further and complete information is represented by the secretion which is poured forth from the pancreas as the pancreatic juice. When these new facts are brought to the mind by the process of mental digestion, the old particulars are laid aside for the consideration of the new ones, which operation is like the disappearance of the granules at the beginning of digestion, and their multiplication afterward.

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Diabetes, in which too much sugar is formed in the system, and which is often attended by a diseased condition of the pancreas, seems to correspond to the state of mind which takes great pleasure in learning a lot of disconnected facts, but is very deficient in the power to give these facts unity and value through combining them by a central and explanatory theory into an organic whole. The mind cannot be healthy, nor indeed can mental activities continue to exist, if the faculty of combining separate and isolated facts into some general conception is undeveloped or entirely wanting.

The circumstance that the venous blood from both the spleen and the pancreas is conveyed to the liver for purification and union with the new chyle seems to represent that the obscurities as to outward action which the faculties of analysis and synthesis are unable to dispel are remanded for enlightenment or removal to the faculty of judgment what to do and what is feasible and useful; while the analytical and synthetic ideas they furnish are united with its own fresh knowledge by such judgment, and the whole is harmonized and made the basis of new possibilities of wise goodness and usefulness.

The faculty of analysis performs an important use in the mind by separating and breaking up the old, outworn elements which need to be discarded; and the faculty of synthesis performs the

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still more important use of combining the new elements of knowledge into a form capable of nourishing and sustaining the mind's activities.

Although Worcester has failed to see the correspondence of the pancreas, he has admirably interpreted, in the following passage, the function of the spleen:

"As the use of the spleen is to prepare the blood so that in the liver the pure, living portion may unite readily with the new chyle, and the hard, unelastic particles may be separated and rejected, the spiritual work of the spleen of the mind is to examine the thoughts of the heart, and prepare them to unite readily with new ideas, affections, and satisfactions which come to us in our work and social intercourse with the community. In the spleen of the mind the thoughts are drawn out into a quiet chamber, apart from the busy circulation, and there the feelings and opinions that are beginning to make trouble are candidly inspected, and those elements which do not agree with the practical life of charity are detached from those that are alive and willing, and are made ready for speedy rejection. Their hold upon the mind is loosened, so that when the opportunity for usefulness comes they are immediately given up. Minds in which this work is not well done, which adhere tenaciously to by-gones, and therefore do not come into pleasant relations with new things that are both true and good, but are disposed to complain of evils which arise simply from their own lack of sympathy and charity, are popularly called 'spleeny';

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perhaps from a common perception or tradition of the uses of the spleen surpassing the medical science of the present day." [1]

In the Greatest Man of our earth, the spleen is represented by France, and the pancreas is represented approximately by Germany.

In the Greatest Man of heaven, the societies of the spleen are the angels who love to analyze, to think analytically, and to devise plans of procedure in frictional affairs that will obviate the difficulties in the way. Their peculiar habits of thought enable them to clear away many obscurities that would otherwise exist in the minds of the angels in general; for they analyze ideas and reduce them to their simplest forms, and so ascertain exactly of what they consist. The angels of the spleen perform an important service in the Heavenly Economy; for they disintegrate, and so prepare for rejection, elements of thought and feeling which have been outgrown by the heavens, and also false and evil elements injuriously joined to things that are good and true, all which need to be separated and removed in order that new and purer thoughts and feelings may be adopted. Such a process must be constantly taking place in heaven; for in order that the angels may grow more perfect, their old, perverted, and narrow ideas and states of feeling need to be broken up and dissolved, as the angels

[1] *Physiological Correspondences*, pp. 119–121

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are thus prepared to receive truer views and wider, better sympathies and emotions.

Doubtless many angels who require special discipline in this direction come to the province of the spleen in order that such disintegration and removal of effete ideas and habits may be facilitated; and the critical analysis of the angels of this province must quickly detect the presence of any evil spirits who may have insinuated themselves into the company of good spirits, and these would be speedily detached for rejection. All the effete elements and perverse spirits so separated from the living and good by the angels of the spleen are conveyed through the societies of the splenic and portal veins to the province of the liver, where they are promptly removed as useless and obstructive, and become like the excrementitious bile discharged into the intestines.

The societies of the pancreas are the angels who delight in gathering exact and complete knowledge on a subject, in order to formulate the facts into a comprehensive and adequate system. Their theoretical ideas are useful to the heavens, because they constitute a central nucleus around which other facts may be grouped, and thus order and system may be introduced into the chaos of the disconnected facts of knowledge. Even when such theories are not absolutely correct, they are valuable as working hypotheses until the exact truth can be fully demonstrated.

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No doubt angels who are in special need of fresh, constructive ideas are sent to the province of the pancreas to have their thoughts expanded and their sympathies widened by the broad mental food there furnished.

The angels of the pancreas perform a vital service in the Heavenly Man; for they especially are concerned with building up individual spirits, so different in their natures, into a unified whole. They send emissaries, represented by the pancreatic juice, among the new spirits who have arrived in the intestinal societies, and gather from every quarter all worthy spirits who are capable of being incorporated into the Greatest Man. When these novitiate spirits are brought to the province of the pancreas by the appropriate arterial societies, the pancreatic angels endeavor to establish a sympathetic bond among them, and to combine the different individuals into a harmonious whole, in order that they may be readily accepted and assimilated by the heavenly societies to which they belong. Indeed it is probable that the first initiation of most spirits into heavenly order and unity is accomplished in the pancreas. After such efforts on the part of the pancreatic angels, the novitiate spirits are dispatched through the societies of the pancreatic, splenic, and portal veins to the province of the liver, where the preparatory work of purification and initiation is completed.

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Hence the angels of the spleen and the angels of the pancreas have opposite, but supplementary, functions; for the former assist in breaking up and separating effete and narrow forms of thought and feeling, while the latter aid in the upbuilding of fresh, comprehensive forms suitable for heavenly life.

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THE OMENTUM

THE great omentum is a large fold of membrane, usually more or less loaded with fat, which is suspended from the stomach and the transverse colon, and hangs down in front of the intestines like an apron. An upward prolongation of the great omentum, known as the gastro-splenic omentum, runs from the stomach to the spleen. The small omentum, which is thinner and more transparent than the other, extends from the stomach to the liver. These omenta, together with the adjacent membranes and viscera, form a small sac, which communicates, through the foramen of Winslow, with the large sac of the peritoneum.

Swedenborg's teaching in regard to the functions of the omentum, which accords in the main with current physiology on the subject, is that the omentum stores up deposits of fat for the future use of the system, protects the invested viscera from changes of temperature, and exhales an oily vapor to lubricate the visceral surfaces moving over one another.[1]

The great omentum corresponds to the faculty

[1] *Animal Kingdom*, 259–265.

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of contentment, and the small omentum, more interiorly situated and of a more delicate structure, seems to correspond to contentedness to be led by the Lord.

A contented frame of mind is a source of serenity and quiet enjoyment, and these attributes of contentment are reflected in the omentum's functions. The fat which the omentum collects and deposits is like the enjoyments in the good things of life which contentment gathers to itself; the protection which the omentum affords against the injurious effects of heat and cold is like the protection which contentment lends against excited greed or intense depression; and the oily vapor distilled by the omentum to lubricate the abdominal viscera is like the cheerful serenity which is the gift of contentedness, and which enables the mind to work quietly and smoothly. Contentment also drives away bitter and dissatisfied thoughts and feelings which infect the mind and impede its healthful activities, a physiological function which is singularly akin to the use of the rich oil of the omentum in softening and dispelling acrid and saline substances, and preventing them from spoiling the exquisite works of the human mechanism.

It seems probable that "the fat covering the intestines" made use of in the Jewish sacrifices was the great omentum, and that "the fat upon the liver" was the small omentum.

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In the Greatest Man of our earth, the omentum is represented by the Congo Free State.

In the Greatest Man of heaven, the societies of the omentum are the angels who live in supreme contentment, and who are satisfied to be led by the Lord and not by themselves. Their peaceful enjoyment of heavenly life, unclouded by any shadow of discontent, they freely impart like an oil of joy to the other angels whenever selfish and unattainable cravings arise in their minds and threaten their happiness. Happily contented with their lot whatever it may be, and willing as a child to follow the Lord's leadings, the angels of the omentum influence for good the whole heaven, removing dissatisfied and disquieting emotions, and instilling in their stead the sweet serenity of contentment.

It is possible, as Worcester suggests, that good spirits who have been taken up from the intestinal societies are often detained in the province of the omentum until the time is ripe for their being conducted to their own societies, and that such detained spirits, who meanwhile are learning the lesson of spiritual and natural contentment, are those whom Swedenborg describes as being kept concealed in many places in the lower earth, where they live cheerfully and worship the Lord:

"Such quiet places, where hell is not known and where the good dwell cheerfully together, cannot be

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in the intestines, through which evil is continually passing, and where painful vastations are always going on. But the omenta covering the intestines, and the various deposits among them, are in nearly the same situation relatively to the stomach, and though very near the evil may not be at all disturbed by them. The deposits in the liver, also, though so near the evil in the gall-bladder, are perfectly protected from them, and may well represent a peaceful, gentle life in waiting for freer opportunities." [1]

[1] *Physiological Correspondences*, pp. 128, 129.

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THE PERITONEUM AND THE MESENTERY

THE peritoneum is a large, elastic membrane, consisting of two layers, which lines the cavity of the abdomen and invests most of the viscera. The peritoneum unites the abdominal viscera in a common bond, and communicates to them the alternate expansions and contractions of the thorax.

The mesentery is a broad, fan-shaped fold of the peritoneum, which attaches the small intestine to the back of the abdomen. Between the layers of the mesentery lie the blood-vessels, nerves, and lacteals which supply the intestines. These lacteals, which absorb the chyle from the intestines, pursue tortuous paths in the mesentery, and pass through numerous lymphatic glands there on their way to the receptacle of the chyle. Similar folds of peritoneum connect portions of the large intestine to the rear abdominal wall or otherwise hold them in position.

The chief functions of the peritoneum and the mesentery are to support and keep in place the viscera they invest, and to reduce the forces and

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movements of all to one constant standard, thus repressing undue impetuosity and quelling injurious disturbance.[1] In the performance of these duties, the peritoneum and mesentery are subjected to considerable strain and friction from the operations of the abdominal organs.

The great similarity in structure and function between the peritoneum and the mesentery shows that they have a similar correspondence, and their elastic ability to receive and neutralize any extraordinary movements of the viscera they enclose, and quietly to restore them to natural and orderly motions, indicates some calm and patient quality. As the mesentery is the more interiorly located, it must correspond to a more interior faculty.

The peritoneum corresponds to the faculty of endurance or fortitude, and the mesentery corresponds to the faculty of equanimity.

The faculty of endurance bears passively, without resistance or complaint, many unpleasant and even painful impressions, and is capable of sustaining a great deal of disagreeable pressure without unduly yielding or becoming aggressively angry. In the same way the peritoneum is a wide, elastic membrane, able to receive severe strains from many sources without breaking and without reacting violently to them.

The faculty of equanimity preserves a tranquil

[1] *Animal Kingdom*, 320, 322.

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composure of mind in the midst of unpleasant happenings or rude affronts, being determined not to be disturbed by petty irritations; and similarly the mesentery bears serenely and composedly the frictional twistings of the coils of the small intestine, which it holds quietly, yet firmly, in its grasp in spite of their writhings.

Such quiet endurance and imperturbable equanimity are very necessary to the faculties which are concerned with the careful sifting out and rejection of all evil and useless elements from the mind, and with the patient examination and preparation of the good and true elements, duties which for the most part are representatively performed by the viscera of the abdomen; for they enable these faculties to keep on with their work in the midst of irritating surroundings, and help to reduce them to order and tranquillity whenever any unruly and resentful passions temporarily possess them. The faculty of analysis, as represented by the spleen, seems to have less endurance in its activities than the other abdominal faculties; for the spleen lies outside of the peritoneum, and seems to be unconnected with the peritoneum proper.

In the Greatest Man of our earth, the peritoneum is represented approximately by Portuguese East Africa, and the mesentery is represented approximately by British Central Africa.

In the Greatest Man of heaven, the societies of

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the peritoneum are the angels who by their ability to endure unpleasant things uncomplainingly are peculiarly fitted to unite all the abdominal societies into a common whole. By their passive and patient endurance they accommodate these societies to one another, and in case of unusual disturbance they bring them back from passionate vehemence to peaceful order. No doubt the angels of the peritoneum render important service to men on earth in times of great temptation, when it is imperative for their spiritual welfare that they endure distressing experiences without yielding. The influence of the peritoneal angels must also be of great assistance to the abdominal societies of heaven in enabling them to bear quietly and patiently the many wearing experiences they have to undergo in separating the good from evil spirits, and preparing the good and rejecting the evil.

Swedenborg speaks of the endurance of the spirits relating to the peritoneum, who bore quietly and unresentfully the attacks of other spirits until they found that modesty was of no avail; and he states that they do nothing from themselves, but from others, in like manner as the peritoneum is passive in its functions, being acted upon by the diaphragm and the abdominal organs.[1]

The societies of the mesentery are the angels

[1] *Heavenly Arcana*, 5378.

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who cultivate inward tranquillity of mind rather than pure endurance. These societies surround those of the small intestine, and between their serried ranks extend the societies of the mesenteric lacteals and lymphatic glands, whose function it is to receive and sort the good spirits who are taken up like chyle from the intestines of the Greatest Man. The even serenity of the mesenteric angels is a great support and aid to the intestinal and lacteal societies, who have to come in contact with so many different kinds of humanity, and who, in dealing with them, are called upon to bear tranquilly and with unruffled spirits many exasperating occurrences.

The labyrinthine course, dotted with numerous lymphatic glands, which characterizes the lacteals of the mesentery, represents the many ways and associations into which new spirits are led by the angels of the lacteal societies in the effort to ascertain their true aptitudes and capabilities before the spirits are distributed to their respective homes.[1]

[1] *Divine Providence*, 164; *Heavenly Arcana*, 5181.

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THE BUTTOCKS

THE buttocks consist mainly of the three gluteal muscles; and the roundness and prominence of this region are due chiefly to the amount of fat in the superficial tissue, a feature which is usually more pronounced in females than in males.

The gluteus maximus muscle is four-sided in shape, and is the coarsest and heaviest muscle in the body. Its action abducts the thigh, and rotates it outward, thereby enabling the body to sit down comfortably; it also extends the thigh bone upon the pelvis, and thus serves to raise the body from the sitting to the erect position. In walking it acts from the thigh to the pelvis, maintaining the body erect, and it also aids in propelling the body in running and leaping. The gluteus medius muscle is fan-shaped, and its action from the pelvis is to abduct the thigh and to rotate it inward, while acting from the thigh bone it extends the pelvis outward, thereby helping to balance it when a person is standing on one leg. The gluteus minimus muscle is similar

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in shape to the gluteus medius, with which it is closely associated for a part of its course; its main action is to assist the other gluteal muscles in balancing the pelvis.

The buttocks correspond to the faculty of assurance, the gluteus maximus muscle corresponding to emotional assurance, and the gluteus medius and gluteus minimus muscles corresponding to intellectual assurance.

Assurance is a self-possession of mind which prevents a person from becoming embarrassed or dismayed by the presence of others, and which serves to give confidence and freedom to the outward activities; and answering to these mental functions the buttocks provide a strong cushion for the body where it may sit and rest in comfort, and the gluteal muscles enable the lower part of the body to balance itself, and to perform its motor actions easily and confidently.

The location of the buttocks at the rear of the pelvis is apposite; for the pelvis corresponds to the love of doing no work, and on the one hand cessation from active labor and consequent idleness tends to give assurance to the mind, while on the other hand assurance as to the means of livelihood is needful for the maintenance of a spirit of indolence and recreation.

Although a woman as compared with a man has more fat in the superficial tissues of the body, a circumstance which gives her form superior

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roundness and beauty of contour, and which no doubt is due to her greater emotionality, for fat corresponds to emotional enjoyment, the larger development of fat in the buttocks of women seems to answer to the feminine fondness for feelings of assurance; for women are usually more marked than men in their desire for sure incomes and assured conditions, and are therefore less inclined to take risks or to depend upon uncertainties even when there is a likelihood of considerably larger returns.

From the region of the buttocks projects the tail of animals; but man has no tail. The tail of an animal seems to correspond to the enjoyment in being the affection itself; for the affection itself is represented by the head of an animal, and the tail is a direct continuation of the head. Such enjoyment is proper to brutes, because animals are nothing but the affection which they represent, and their constant enjoyment in their own specific affection prevents them from entering into any other affection. Man, however, has no such limitations, but at different times may take on the nature of a sheep, a goat, a horse, or any other animal; whereas if he had a tail, he would always be confined to the one affection of living spiritually, for man corresponds to the love of living spiritually in imitation of the Divine life.

The scriptural prophecy that Assyria should

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lead Egypt and Ethiopia into captivity with their buttocks uncovered [1] seems to mean that the reason would overthrow the mere knowledge of supernatural things and the fallacious thoughts founded thereon, and would expose and put to shame their presumptuous effrontery.

In the Greatest Man of our earth, the buttocks are represented by Cape Colony, the gluteus maximus muscle being represented by the broad western portion, and the gluteus medius and minimus muscles by the narrower eastern portion.

In the Greatest Man of heaven, the societies of the buttocks are the angels whose strongest trait is unabashed assurance, and their chief function consists in communicating such calm assurance for the common weal. Through their knowledge of what they have done or can do, these angels possess faith in their own abilities, and also lend confidence to the other angelic societies in their various undertakings. So, too, whenever the whole heaven moves as one man, the angels of the buttocks furnish the same motor forces that the gluteal muscles supply in the body.

[1] Isaiah xx., 4.

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THE GENITALS

THE male and the female generative organs exhibit a greater difference between the sexes than any other part of the human anatomy; and it is evident that this great difference is owing to the fact that the male generative organs are constructed for the secretion and communication of the semen, while the female generative organs are constructed for the reception of the semen, and the consequent production of offspring.

Although so different anatomically, there is a general analogy between the male and the female organs of generation, and therefore they will be described together.

In the male, the scrotum is the pouch of skin which contains and protects the delicate testicles. The equivalent of the scrotum in the female is the folds of skin known as the labia, or lips, which lie at the outward entrance of the female generative organs. These are developed in the embryo from the same genital folds as the scrotum, and they have a similar function of covering and protecting the more delicate inward structures.

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The testicles are the delicate glandular organs, consisting mainly of an immense number of little tubes, which have the function of producing the spermatozoa,—minute, thread-like bodies which are the essential fertilizing element of the semen. The inmost substance of the semen, however, is drawn by the testicles from the nerve fluid and from the blood, and is not formed in the testicles themselves, which merely furnish a covering for this interior substance.[1] Moreover, the spermatozoa, as they exist in the testicles, are quiescent, and have no power to cause fertilization until the secretions of the accessory male genital organs are added to the secretion of the testicles.

The female organ analogous to the testicles is the vagina, a membranous canal extending from the external female generative organs to the uterus or womb. As the testicles are the primary organs in the secretion of the semen, so the vagina is the first of the female organs to receive the semen and the penis communicating it; but just as the semen of the testicles, in order to become active and prolific, needs the formative influence of the other generative organs, so the vagina, although it first receives the semen, has no ability to become impregnated by it, but only gives it passage toward the other female organs which possess the reproductive capacity.

The semeniferous tubules of the testicles empty

[1] *Generative Organs*, 9, 18, 26, 33, 34.

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into the epididymis, which constitutes the first and greatly convoluted part of the duct of the testicles. From the epididymis begins a long, narrow tube, called the vas deferens, which extends to the base of the bladder, where it enlarges into what is known as the ampulla of Henle. The vas deferens is an important storehouse of the semen, and its glands contribute a necessary part to the seminal fluid. At the termination of each vas deferens are situated the seminal vesicles,—small branched sacs, the primary function of which is to supply an additional fluid to the semen, although they also act as reservoirs for the seminal secretion. Near the openings into the urethra through which the seminal vesicles pour the semen, lie the numerous openings of the ducts of the prostate gland, a chestnut-shaped organ which completely surrounds the urethra in this region, and which contributes a viscid secretion to the semen, the specific use of which is not known. Swedenborg's theory is that the secretion of this gland envelopes and protects the semen in its passage through the urethra, and prepares the way for its reception.[1]

The uterus, or womb, is a hollow muscular organ that extends upward from the vagina. It is broad at the upper end, but is constricted at its lower extremity into a narrow passage known as the neck of the uterus. The uterus receives

[1] *Generative Organs*, 69.

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the semen discharged into the upper part of the vagina, or perhaps into the neck of the uterus, and affords a passageway for the semen to the Fallopian tubes, in which the impregnation of the ovum is usually accomplished. In case an ovum becomes fecundated, the uterus attaches it to its wall, provides the incipient fœtus with nutriment, and expels the child at birth. The two Fallopian tubes start at the upper extremity of the uterus, and terminate in free ends opening into the peritoneal cavity, and having several fringe-like processes, one of which, longer than the rest, is attached to the ovary. The ovaries are almond-shaped organs devoted to the production of the ova, the essential female element in fertilization. The Fallopian tubes have the double function of receiving the semen from the uterus, and of conveying the ovum into the uterus; and they serve to bring together the spermatozoa and the ova, in order that impregnation may be effected. During the development of the ovarian follicle containing the ovum, it gradually approaches the surface of the ovary, where it bursts when mature, and sets free the ovum. Thereupon the fringe-like processes of the Fallopian tube grasp the ovary, while the aperture of the tube is applied to the spot where the ovum escaped to the exterior of the ovary.

In a general and functional way, the ovaries and the Fallopian tubes of the female are analo-

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gous to the epididymes of the male, the uterus is the equivalent of the vasa deferentia, and the neck of the uterus represents the seminal vesicles; but the analogy is only approximate in the case of the ovaries and the Fallopian tubes, which are peculiarly feminine organs, and do not answer to any male prototypes. In fact, the epididymes of the male are really represented in the female by blind ducts in the neighborhood of the Fallopian tubes known as the ducts of the parovarium. It is commonly considered that the ovaries in the female, because they produce the ova, are the counterpart of the testicles in the male, which produce the spermatozoa: but such a view overlooks the essential difference between the sexual productions of the male and those of the female; for the active and originative element is furnished by the male, and the passive and reactive element is furnished by the female, and these differing elements are not produced by corresponding organs of the body any more than they are by corresponding parts of the mind.

The penis is composed mainly of erectile tissue; and its functions are to act as the chief male sensory of physical sexual pleasure, and to convey the semen through the urethra into the female organs of generation. The clitoris of the female, which is situated above the entrance to the vagina, answers to the male penis. It resembles a miniature penis, and is in fact developed from

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the same genital eminence in the embryo. The clitoris, like the penis, is the chief female seat of physical sexual pleasure. At the base of the clitoris, and extending down the sides of the vagina, are two oblong masses known as the bulbs of the vestibule; and these belong to the clitoris in the same way that the bulb of the corpus spongiosum belongs to the penis.

It is evident that the genitals correspond to the faculty of sexual love, for they are devoted to sexual activities. The genitals proper fall into two general divisions, one of which is constituted by the penis and the clitoris with their adjuncts, which correspond to the love of physical sexual intercourse, and the other of which is constituted by the rest of the genitals, which correspond to the love of sex as manifested in the communication and reception of feelings and ideas. The testicles and the vagina correspond to the love of the sex as an emotion, being communicative in the case of the testicles, and receptive in the case of the vagina. The epididymis corresponds to the love of the sex as manifested in the communication of concrete thought; the vas deferens corresponds to the love of the sex as manifested in the communication of abstract thought, and the ampulla of Henle to the memory of the formulated idea to be communicated; the seminal vesicles correspond to the expression of the idea in words; and the prostate gland corresponds to replying to the

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questions of others in regard to the idea communicated.

The scrotum of the male and the labia of the female are a part of the skin, and do not belong to the genitals proper; they seem to correspond to the love of tactual contact with the opposite sex. The hair surrounding the genitals, which is an outgrowth from the skin, seems to correspond to talk with the opposite sex on venereal subjects. These things, like the outward genitals representing them, serve to cover and protect the more internal aspects of the love of the sex.

The neck of the uterus and the uterus correspond to the thoughtful reception of the intellectual elements of the masculine idea, with an effort to understand them; the Fallopian tubes correspond to the faculty of critically selecting from the mass presented such ideas as agree with the feminine affection; and the ovaries correspond to the concrete feminine thinking with reference to masculine ideas, the ova being the feminine thoughts.

The above correspondences are supported by the functions of the several generative organs.

The testicles correspond to the love of sex as an emotion, because they are the first in order of the male generative organs, and the most important in the formation of the semen; and as the masculine mind is inmostly emotional and perceptive,[1]

[1] *Marriage Love*, 32.

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therefore its essential sexual productions must be perceptions, and the testicles must correspond to the emotional element of the love of sex, because all perception comes from feeling.[1]

The seed of man, according to Swedenborg, is conceived interiorly in the understanding, formed in the will, and transferred into the testicles, where it puts on a natural covering.[2] The natural covering provided in the testicles for the seed is no doubt the spermatozoa, which seem therefore to correspond to masculine perceptions in regard to the communication of truth. The original perceptions of new truth are formed in the brain, and it is only with the communication of these perceptions or truths that the testicles and the other male generative organs have to do; but these cerebral ideas are first clothed in the masculine perceptions as to how they can be adequately conveyed to receptive minds, for a receptive mind, whether the person is a man or a woman, is relatively feminine to the communicator or propagator of truth which he himself has perceived.

The epididymes correspond to the love of the sex as manifested in the communication of concrete thought, because they constitute the first part of the duct conveying the semen out of the testicles, and imparting to it its first condensation,

[1] *Divine Love and Wisdom*, 406; *Apocalypse Explained*, 47, 405

[2] *True Christian Religion*, 584.

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and the first distinct descent from emotion to a lower and denser plane is in concrete thought, and the second descent is in abstract thought, which, as regards the communication of new ideas, is represented by the vasa deferentia. The ampullæ of Henle correspond to the memory of the formulated idea to be communicated, because these ampullæ are at the termination of the vasa deferentia and act as storehouses for the semen, just as the next step after the elaboration of a perception by means of concrete and abstract thought is its reception in the memory as a formulated idea.

The seminal vesicles correspond to the expression of the masculine ideas in words, because their primary function is to furnish a large part of the fluid of the semen, which action is exactly similar to the exposition of an idea by the addition of suitable words.

The prostate gland corresponds to the faculty of giving answers to the questions of others with reference to the idea communicated, because the function of its secretion in enveloping and preparing the semen for reception is precisely like the accommodation of the masculine idea to a receptive mind by means of such answers.

The vagina corresponds to the emotional reception by the female of the sexual emotions and perceptions of the male, because the vagina first receives the semen and its perceptive spermatozoa

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communicated through the penis, and first reception is usually through the emotions or love; but because the feminine sexual function is essentially different from the masculine, therefore the vagina has no originative function like the testicles, but only acts as a means of conveyance to the female productive organs.

It is noteworthy that whereas with the man the means of outward conjunction with the female is through his love of physical sexual intercourse represented by the penis, with the woman, besides the love of physical sexual intercourse represented by the clitoris, outward receptive conjunction is also afforded through the higher love of receiving the emotional life of the male, which love is represented by the vagina. This difference between the male and the female may account in part for the fact that while with a man the love of the sex is general, with a woman the love of the sex is usually confined to one man[1]; for the love of receiving the emotions of one person tends to weaken the desire of receiving the emotions of any different person, whereas the mere love of physical sexual intercourse can be gratified by almost any member of the female sex.

The neck of the uterus and the uterus or womb correspond to the thoughtful reception of the intellectual elements of the masculine idea with an effort to understand them, because this organ

[1] *Marriage Love*, 296.

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receives the semen interiorly, a function which is correspondentially like receiving the intellectual elements of the masculine mind.

The mental uterus is like the vas deferens of formulative abstract thought, in that it matures within itself, by thought with regard to the application to other facts and circumstances, the conceptions which have originated from the meeting of the spermatozoon of perception and the ovum of thought; and when the original conception has been enlarged and developed by such formulative meditation, it is given birth in actual expression as through the neck of a uterus.

The Fallopian tubes correspond to woman's faculty of critically selecting from the mass presented such perceptions as agree with her own affection, because as the Fallopian tubes open at their extremities into the cavity of the peritoneum, it is plain that they exercise a power of choice; for unless the tubes grasp the ovaries and bring the ova toward the spermatozoa, the spermatozoa would pass through the tubes into the cavity of the peritoneum and be lost, and no conception would take place.

The ovaries correspond to the concrete feminine thinking with reference to masculine ideas, and the ova to feminine thoughts, because the feminine mind is inmostly intellectual and receptive,[1] and therefore its essential productions

[1] *Marriage Love*, 32.

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must be thoughts; for these are the fruits of the intellect, and are formed in the feminine sexual thinking faculty just as the ova are formed in the ovaries. The follicles in which the ova are developed are like the states of meditation out of which grow the feminine thoughts.

As a woman thinks from love, while a man thinks from intellect,[1] therefore the whole sexual feminine thinking must be affectional or emotional in its nature; but the feminine thinking represented by the uterus is abstract, while that represented by the ovaries is concrete. The above difference between masculine and feminine minds explains why the ova are produced in what represents the sexual concrete thought degree of the female, and not in the vagina, which represents the feminine emotional degree of the love of sex, answering to the male testicles.

As it is masculine to love and to do what is true and good, and feminine to think that it is true that a thing is good,[2] therefore some sense of the goodness of truth must accompany the feminine thoughts represented by the ova. At the time of the rupture of an ovarian follicle and the escape of the ovum, certain changes occur within the follicle which result in the production of a yellowish mass known as the corpus luteum. If the ovum is not impregnated, the growth of this

[1] *Heaven and Hell*, 368; *Marriage Love*, 168, 175.
[2] *Marriage Love*, 220.

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yellow substance proceeds no farther than the formation of a thin layer, which shortly disappears; but if the ovum becomes impregnated, the substance continues to grow during nearly the entire period of gestation, and a large corpus luteum is formed, which, although finally dwindling, remains on the ovaries for a long time after the birth of the child as a white, star-shaped cicatrix. The corpus luteum seems to correspond to this feminine sense of the goodness of truth. The thin layer that is formed in the corpus luteum when the ovum is not impregnated is a woman's superficial feeling of joy in the truth of her thought, which soon fades away; but when the ovum of feminine thought is enlightened and completed by the entrance of the perceptive masculine life, her sense of joy in the truth grows and deepens as the masculinely inspired production of her mind is modelled and fashioned in the plastic womb. Long after the birth of these children of the thought, the remembrance of the goodness and joy of their truth persists like a stellar scar on the ovaries of feminine mentality.

The correspondential meaning of the growth of the fecundated ovum, and the destruction of the unfecundated ovum, seems to be that when a woman receives a masculine idea which is in accord with her affection, she at once brings her concrete thought to bear upon it in order that she may fully understand the masculine idea by putting

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it into ideas growing out of her own knowledge and experience, a mental action which is like the approach and meeting of the ova and spermatozoa in the Fallopian tubes. If, however, no concordant perceptions present themselves, the concrete feminine thought on the subject nevertheless continues, and goes forth into abstract thought and into words, like the passage of the unimpregnated ovum into the uterus and the neck of the uterus; but having found no suitable masculine perception, it then perishes for want of further development, and the energies which would have been devoted to the upbuilding of new forms of thought and life go to waste, a psychological process which is doubtless represented by the phenomenon of menstruation, which is a physiological sign of disappointed impregnation. The subsequent growth of the embryo in the uterus represents the development of the original conception, springing from the fusion of the masculine perception and the feminine thought, by abstract thought on the subject in order to perfect the understanding of it, and by viewing the embryotic idea in its relation to new particulars of knowledge. In this way the germinal conception grows gradually into a complete and well-defined spiritual entity.

It is Swedenborg's idea that the male seed is furnished with a series of clothings as it passes through the several male generative organs, and

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that these clothings are successively dissolved or removed in the correlative female generative organs.[1] If this theory is correct, the clothing of words provided by the seminal vesicles is removed in the neck of the uterus, which has the function of understanding the meaning of the words; the clothing of formulative abstract thought furnished by the vasa deferentia is separated in the uterus, which has the function of receiving and understanding such abstract thought; the clothing of ideas of concrete thought supplied by the epididymes is perhaps absorbed in the Fallopian tubes, which have the function of selecting suitable elements. In this manner the perceptive spermatozoon, which is the first and purest sexual embodiment of the inward masculine truth, is set free to mate without hindrance with the ovum of feminine thought.

The penis and the clitoris correspond to the love of physical sexual intercourse, because the pleasure of sexual intercourse resides chiefly in these two organs, which moreover are the most external of the generative organs proper, and therefore representative of the ultimates of sexual love. The diminutive size of the clitoris as compared with the penis agrees with the fact that the sexual passion is much stronger in men than in women.[2]

The prepuce, or foreskin, which is the free fold

[1] *Heavenly Arcana*, 8847; *Generative Organs*, 35.
[2] *Marriage Love*, 219.

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of skin at the extremity of the penis, seems to correspond to sensuous desire for sexual intercourse; for as a part of the skin the foreskin shares in the skin's craving for touch, and it is besides the most external portion of the penis. On account of this correspondence, when mankind fell into external and perverted states, the foreskin came to signify sexual lustfulness, and consequently the perverse and filthy lusts of the flesh in general; and the rite of circumcision signified the removal of such filthy corporeal loves.[1]

Many other branches of the present subject, such as spiritual and natural prolification, the determination of sex, and regeneration, have been admirably treated of by Worcester in his *Physiological Correspondences;* and therefore these topics need not be discussed here.

In the Greatest Man of our earth, the genitals proper are represented by Algeria and Tunisia.

In the Greatest Man of heaven, the societies of the generative organs are the angels who are in the marriage of truth and good more than all the others, and who in consequence live in a most delightful state of peace.[2]

The angels of the testicles and the vagina are they who delight in the communication and reception of the pure and innocent emotions arising

[1] *Heavenly Arcana*, 4462, 7045; *Apocalypse Explained*, 781.
[2] *Heavenly Arcana*, 5050–5052.

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from the love of the opposite sex, and the angels of the testicles continually draw down from the inmost heaven fresh supplies of new truth, which by their keen perceptions are converted into forms capable of being readily communicated to receptive minds. The angels of the epididymes and the vasa deferentia add the elements of concrete and abstract thought necessary to complete the communication of the new truth, and the angels of the seminal vesicles delight in giving verbal expression to the truth in the course of communication. The angels of the prostate gland excel in accommodating the new truth to intelligent and receptive minds by answering their questions and thoughts in regard to it.

The angels of the neck of the uterus and the uterus love to receive in a thoughtful and intelligent way the truth so communicated, and in order to understand the truth they divest it of its merely verbal clothing, and lay bare the abstract thought within. The inward ideas thus disclosed they pass on to the angels of the Fallopian tubes, who critically examine them, and select such as are in accord with their heavenly affections. Such ideas as are in harmony with their love they accept, and bring them into intimate relation with the concrete thoughts of the angels of the ovaries, who earnestly desire such inner wisdom for the development of their own thoughts, in which is their joy. When through

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the instrumentality of the angels of the Fallopian tubes the mated masculine perception and feminine thought become united, the idea thus conceived flows onward for its further development to the angels of the uterus, who by their comprehensive meditations amplify and expand the idea until it takes on the rounded form of living truth. In this heavenly intercourse the angels of the female generative societies supply the elements of goodness to the wisdom which they receive from the male generative societies.

There are no natural births in heaven, but there are spiritual births of new truths and goods[1]; for the natural masculine love of begetting children is there converted into the spiritual love of having the truths which have been perceived developed by receptive minds into new forms by application to new lines of thought and life, and the natural feminine love of bearing children becomes there the spiritual love of developing the communicated truth into such new intellectual and emotional forms by building it into one's own thought and experience.

Such communication of lofty wisdom on the part of the male generative societies of heaven, and such reception and development of wisdom, together with a sense of joy in the truth, on the part of the female generative societies, must be constantly taking place, and the angels who par-

[1] *Heaven and Hell*, 382; *Marriage Love*, 52.

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ticipate in this interchange must needs be in a state of peace and deep joy; for their happiness springs from the union of wisdom and goodness, in which is the fullest reception of the Lord.

The ultimate element of the marriage love existing between these male and female societies is furnished by the angels of the penis and the clitoris, who above all the other angels delight in physical sexual union.

The genital societies which relate to the parts of the skin and the hair covering the more inward genitals serve as a suitable covering and protection for the other genital societies by reason of their love of outward contact with the opposite sex and their warm expressions on sexual subjects.

The angels of the generative societies also have many functions in relation to men on earth; for they have charge over fœtuses in the womb, whom they love tenderly and help to nourish and perfect.[1] They also inspire into man the sexual faculty, and assist him in his regeneration, and they perhaps are entrusted with the task of providing for the birth of the kind of men and women the world and heaven need for the production of a complete organic social fabric.[2]

[1] *Heavenly Arcana*, 5052; *Spiritual Diary*, 1201, 3152.
[2] Worcester, *Physiological Correspondences*, pp. 353–356.

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THE BREASTS

THE breasts, or mammary glands, are the hemispherical prominences situated on the pectoral muscles of the chest, near the summits of which are the conical eminences known as the nipples. The breasts consist of fibrous and fatty tissue, in which are embedded numerous glandular lobules. These lobules unite to form larger lobes, and are furnished with ducts communicating with the exterior through orifices in the nipples.

In the female the mammary organs have the function of secreting the milk, but in the male they are rudimental. In the female these glands are connected through the blood with the generative system; for prior to pregnancy they are smaller and less developed, while during pregnancy they enlarge and a number of changes occur within them. The breasts seem also to be connected with the generative organs through the nervous system,[1] although this point as yet lacks demonstration.

The function of the pectoralis major muscle is

[1] *Generative Organs*, "The Mammæ," 18.

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chiefly to draw the arm forward and rotate it inward upon the chest, and the function of the pectoralis minor muscle is to depress the shoulder, and thus lower the arm.

The breasts correspond to the love of children; the lacteal apparatus, consisting of lobes, ducts, and nipples, corresponds to the love of instructing little children, the milk being the instruction; and the pectoral muscles upon which the breasts lie correspond to the love of sheltering and protecting offspring.

It is plain that the breasts correspond to the love of children; for a mother, in manifestation of her affection, presses her babe to her bosom, and suckles it there out of the fulness of her love. The milk corresponds to suitable instruction for little children, because it is by means of instruction adapting it to its new surroundings that a little child grows spiritually, before the power of examining for itself the fitness of ideas to be accepted, or the ability of assimilating ordinary knowledge, have been formed; and if the milk corresponds to instruction for little children, the lacteal apparatus, which secretes and gives forth the milk, must correspond to the love of formulating and imparting such instruction. The pectoral muscles correspond to the love of sheltering and protecting children, because their characteristic action enables the arms to encircle children in a sheltering and protecting way.

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The rudimentary condition of the breasts in the male as compared with the female agrees with the fact that the love of children is much greater in women than in men.[1]

Swedenborg states that the breasts signify the conjunction of marriage love with the love toward offspring, that the milk corresponds to truth from the good of love, and that to suck the breasts is to be instructed in truths.[2]

By mere receptivity to masculine ideas, without any attempt to understand them deeply, a woman gains a great deal of information in regard to the ideas held by the world at large; and as this is a feminine attitude of mind, and as the knowledge so acquired is appropriate to the breasts, this psychological fact partly explains the relationship between the female generative organs and the breasts; for it is the mental function of the womb to receive masculine ideas intimately and profoundly, while it is the function of the breasts to receive them outwardly as matters of knowledge. A further connection between the breasts and the generative system lies in the circumstance that the breasts take up the nutrition of the infant at the point where the womb leaves off.

The infant is nourished by milk secreted from the mother's blood, but the embryo also is nour-

[1] *Marriage Love*, 393.

[2] *Heavenly Arcana*, 2015, 6432; *Apocalypse Explained*, 710, 731.

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ished by materials drawn from its mother's blood; and while the processes are different, it is plain that there is a connection between them, and that the nutrition in the womb is an inward nutrition, whereas the nutrition from the breasts is an outward nutrition. The nourishment of the embryo in the womb represents the development effected in a newly conceived idea through the application to it of new interior knowledge which is in agreement with one's own state of mind; but the nourishment of the infant from the breasts represents the development brought about in an already formulated and expressed idea through the application to it of the knowledge of truths current in the outside world, but not necessarily in accord with one's inward states of feeling. It is evident that there is such a distinction between the psychological activities of the womb and those of the breasts; for the womb is more internal in situation and function than the breasts, and conducts its gestatory operations carefully sealed up from the outward air, whereas the breasts are epidermal structures, being originally developed as downgrowths from the epidermis into the underlying tissue.

Before pregnancy the alveoli, or little sacs composing the lobules of the mammary glands, are very small and solid, and are lined by a single layer of cells; but during pregnancy and lactation the alveoli enlarge, their cells multiply, and out

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of the materials taken from the blood the milk is manufactured for the nutrition of the child. This remarkable change represents a corresponding transformation in a woman's mind; for before conception she had only a passing interest in masculine ideas which were not in strict accord with her own affection, but after conception her interest in these ideas grows and deepens, because she sees the possibility of applying them in the instruction of her child, in order that while its condition is so helpless and ignorant it may be taught such knowledge of the outside world as is needful safely to adapt it to its new, outward surroundings.

There is spiritual, as well as natural, love of children, and this is the love of the well-defined ideas which thoughtful affection has conceived and developed from wise perception, and also the love of nourishing and protecting such ideas.[1] In the Church, the spiritual love of children is the love of sustaining the new doctrines which she has conceived and brought forth from the reception of the Divine wisdom in her soul; and is it not true that the present New Church is thus nourishing and expanding her new-born doctrines by bringing them into intimate relation with the thought and life of the times?

The breasts are frequently mentioned in the Bible, where they signify the affection for fresh,

[1] *Marriage Love*, 127, 211.

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inward truth, and for lovingly accommodating such truth to the outward environment of current human life and thought. The blessing invoked by Jacob upon Joseph, that the Almighty should bless him with blessings of the breasts and of the womb,[1] signifies that Joseph, or the Lord whom he represents, should have the joy of conceiving new good and true things from God, of developing them by soulful thought and knowledge, and of bringing them forth into ripe utterance, and that he should have also the further pleasure of enlarging the scope and usefulness of such mental products by the application to them of his outward knowledge of the systems of truth prevailing among mankind. Isaiah's prophecy of Zion, "Thou shalt suck the milk of the nations, and shalt suck the breast of kings," [2] means that the heavenly truths of the New Church will be further nourished and developed by the good and true things of all the world. The breasts of the Lord, which were girt about with a golden girdle,[3] correspond to His love for His children as expressed in the Divine goodness.[4]

In the Greatest Man of our earth, the breasts are represented by Tripoli.

In the Greatest Man of heaven, the societies of the breasts are the angels who deeply love the new, innocent goods and truths which have been

[1] Genesis xlix., 25.
[2] lx., 16.
[3] Revelation i., 13.
[4] *Apocalypse Revealed*, 46.

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formulated and expressed by the angels of the uterus, and who delight in providing for their further growth by bringing them into relation with the general thought and life of the heavens. The angels of the uterus in their development of new truth care only for such knowledge as accords with their own inward state; but the angels of the breasts love to listen lightly and affectionally to the masculine ideas of others, even if they are not in complete accord with their own states of feeling. By means of the knowledge thus acquired, the mammary angels are able to give further enlargement and development to the new-born ideas of the uterine angels; for they apply such knowledge to these new ideas, and expand them by bringing out their relation and bearing to the ideas of others on all planes of thought. These angels also protect and defend such fresh, interior ideas from the indifference and attack of those who hold contrary opinions.

As the angels of the uterus have charge over those who are with child, so the angels of the breasts must have charge over mothers who give suck; and no doubt they have the duty of instructing and protecting children who die in earliest infancy. They also inspire into women and men the love of children, and the affection for tenderly instructing and powerfully protecting them.

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THE SKIN

THE skin clothes the whole exterior of the body with an elastic, sensitive, protective membrane, which is continued into the mucous membrane lining the passages, such as the mouth and nostrils, that lead into the body.

The skin consists of two general layers,—the dermis and the epidermis. The dermis constitutes a more or less unified whole, but the epidermis is composed of three distinct strata, known as the stratum mucosum,[1] the stratum lucidum, and the stratum corneum. The dermis is the deep layer of the skin, and is the part that gives it elasticity and sensibility. Projecting from the surface of the dermis are numerous finger-like elevations called papillæ, the majority of which contain looped blood-vessels, but some of which contain the terminations of nerves. The stratum mucosum of the epidermis overlies the dermis, and fills in the depressions between its papillæ. Like the rest of the epidermis, this stratum has no

[1] This stratum is here meant to include the stratum germinativum, the stratum mucosum, and the stratum granulosum.

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blood-vessels, but its texture is softer than the other epidermal layers. The next outer layer of the epidermis is the stratum lucidum, which is made up of flattened cells, forming a uniformly clear zone. The outmost layer of the skin is the stratum corneum, or horny layer, which consists of flat, hard, scale-like cells laid one upon another like a sort of armor covering the body.

Many of the nerves of the skin terminate in swellings or discs among the cells of the epidermis; but in places where the sense of touch is very delicate, such as the tips of the fingers and the point of the tongue, the nerves end in definite organs in the papillæ of the dermis, which are known as tactile corpuscles. There are also other special end organs, such as the end bulbs or corpuscles of Krause and the Pacinian corpuscles, in which the sensory nerves connected with the skin terminate. The end bulbs are found in the lips, the conjunctiva of the eyes, the genital organs, and elsewhere in mucous membranes, but not in the skin proper; and the Pacinian corpuscles are attached to nerves supplying the hands and the feet, and are present in the mesentery, pancreas, lymphatic glands, and other localities.

Out of the epidermis of the skin are formed the nails and the hairs, which serve to protect the more living and sensitive surfaces beneath them.

The sebaceous glands of the skin are small glands, the ducts of which usually open upon the

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hair sheaths, and exude a fatty secretion that lubricates the hair and the skin. The sweat glands are coiled glands, the office of which is to secrete a watery fluid from the blood, and to pour it out as perspiration upon the skin, in order that the body may be cooled when its temperature becomes too high.

The functions of the skin are numerous. In addition to its capacity for perceiving the various sensations of touch proper, it is also the medium for feeling the sensations of heat and cold, pressure, weight, and similar sensations; and besides the excretions through its sebaceous and sweat glands, exhalation and absorption are continually taking place. Through the skin are exhaled carbonic acid, the personal effluvia which affect the sense of smell in animals, and the subtle emanations which constitute animal magnetism; while through the skin also are absorbed oxygen, watery and volatile vapors, the ethereal nutritious elements contained in the atmosphere, and the subtle emanations given out by others. Swedenborg maintains that there are invisibly minute pores in the skin, through which the skin imbibes this pure atmospheric food, and then transmits it through special fibres to the cortical cells of the brain for the manufacture of the animal spirits.[1]

The characteristic action of the skin when

[1] *Animal Kingdom*, 502–504, 507–509; *Spiritual Diary*, 1738.

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subjected to pleasant or unpleasant sensations is finely described by Worcester:

"The sense of touch gives substance and reality to all our sensations, and the sense of the relation of objects to us comes through the touch. Therefore it is that touch signifies in spiritual language communication of affection; for by touch the sensitive papillæ are modified in form to agree with the object of contact, and they either extend themselves with pleasure and open their little pores to receive the influence presented to them, or they shrink with aversion and close their doors. Spheres of life, and of effluvia partaking of the quality and activity of the life, are both communicated and received through the skin; and the touch, including the delicate sense of the quality of spheres, guards all the doors. At the approach of danger, real or imaginary, it orders the doors to be shut, the armor of the skin to be more firmly held, and even the little hairs to be erected and put forth as feelers. But when agreeable influences are felt, the armor is loosened, the advanced capillary guards withdrawn and laid down, and the doors thrown open wide for sweet interchange of congenial life. Hence the highest use of this sense is with two whose lives are one, and Swedenborg says that it is dedicated to marriage." [1]

As the general uses of the skin are to provide a protective covering for the body interposed between its inner mechanism and the outside

[1] *Physiological Correspondences*, pp. 233–235.

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world, and to act as a medium for communicating to the mind through tactile sensations information of what is happening in circumambient nature, it is evident that the skin corresponds to the love of coming into direct contact with persons and things; for it is the function of the sense of touch belonging to the skin to bring us by sensitive contact into direct relation with the objects of the outside world, and the love of coming into personal contact with others protects our inner mind like a skin, because it produces an outward atmosphere of relationship with others which we willingly assume, whereas if we were brought into contact with others while in interior states of mind and without such willingness of communication, we should be painfully irritated by the contact. Moreover, such a love or faculty is well fitted to perform the uses of the skin, because like the skin it constitutes an outward medium through which we can come into real communication with the objects and persons around us, and be directly affected by them; and such love of contact and association with others enables us, like the skin, to spread our communicative outgoings over a wide area, and thus to hold intercourse with others on many different subjects, and to come in touch with diverse conditions of humanity.

The dermis of the skin corresponds to the love of coming in contact with others in an emotional

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way; for the dermis is the most sensitive part of the skin, and many blood-vessels containing the vital blood course through its structure, and answering to these conditions our feelings are the most sensitive part of our love of contact with others, and the part in which most of our life resides. The stratum mucosum corresponds to the love of coming into contact with others in a thoughtful way, because thought comes next in order after emotion, and because thought is less sensitive and vital than the feelings. The stratum lucidum corresponds to the love of coming in contact with others in a cognizant way, because knowledge follows thought in a progressively outward series; and the stratum corneum, which is closely connected with the stratum lucidum, corresponds to the love of coming in contact with others in an expressional way, because expression is the most outward of a series, just as the horny layer is the most outward layer of the skin.

As the tactile corpuscles are found in localities where the sense of touch is the most delicate, it is evident that in them lies the most acute sensibility of touch. They are doubtless the physical means by which the blind are able to read quickly the raised letters in a book, and to guide themselves through crowded streets with merely the assistance of a cane.

The Pacinian corpuscles seem to have the function of determining how much unpleasant

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sensation can be borne without actual pain or injury. No doubt the Pacinian corpuscles attached to the nerves supplying the hands and the feet enable us to hold our hands and feet for warmth as near a fire as advisable, and to withdraw them quickly as soon as the heat becomes too intense and likely to cause pain or discomfort. These corpuscles probably determine, also, how powerful an electric current can be received with equanimity from a battery; and they must perform many similar functions.

The end bulbs or corpuscles of Krause, however, seem to have a use entirely different from the functions of the above corpuscles. We are told that every one is surrounded by a sphere of his life consisting of subtle effluvia separated from his body, and that these encompassing substances excite the atmospheres into their activities and produce the perception of a person's presence with others.[1] This sphere of actual substances is communicated to others by the touch,[2] and probably also by near presence; and it must be received first by the skin. But the perception of the activities produced in the atmospheres by these emanating substances surely requires a more exquisite sense than is possessed by the relatively coarse skin, and this delicate sense seems to reside in the end bulbs or corpuscles of

[1] *Divine Love and Wisdom*, 291, 293.
[2] *Heavenly Arcana*, 10, 130.

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Krause, which seem to have the function of sensing the emotional life of others as revealed by such atmospheric activities. The interiority of these end bulbs is evidenced by their occurrence in the mucous membranes and not in the skin proper.

The perception of the external and the internal quality of others is accomplished through the faculties represented by the tongue and the nose, but these are intellectual faculties, and consequently their operations are largely confined to the intellectual side of persons' minds; whereas the end bulbs of the skin belong to a more emotional sense, and seem to have a perception of the nature of others based upon the reception of the sphere of their emotional life, which is pleasant or unpleasant and welcome or unwelcome so far as it agrees with the life of the individual receiving the sphere. Moreover, the air has its special anatomical organ in the ear, the ether has its appropriate organ in the eye, and it is possible that the aura, the atmosphere of spiritual feeling and connective force, has its own organ in the end bulbs of the skin. We know that the skin receives the sensations of heat, which are caused by more interior ether waves than the sensations of light, and it may well receive, as the most emotional of the senses, the activities of the most emotional of the spiritual atmospheres. If this is the case, the skin is the seat of the most interior

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as well as the most exterior sensations of the physical senses.

Swedenborg compares those who are in truth, but not yet in good, to the skin[1]; for the love of coming in contact with others and expressing one's ideas to them is not a love of doing anything good, but is merely a desire for bringing the individual's life into relation to others, and communicating to them his states of thought and feeling.

The nails correspond to the faculty of ascertaining by personal investigation whether a thing is so; for the faculty of personally verifying statements serves to produce a strong mental certainty on the subject, which resembles the hard, strong nails. The nails on the hands and feet represent respectively the verification of interior and exterior facts; the nails on the thumbs and great toes representing the verification of what is learned by careful study, and the nails on the fingers and toes representing the verification of what is heard or read with attention.

The fourth beast seen in Daniel's apocalyptic vision had nails of bronze,[2] which signify confirmations from the Word that men must lead a good life if they wish to share in heavenly happiness. The removal of false inward and outward views is signified in the Jewish code by

[1] *Heavenly Arcana*, 6402, 8977, 8980, 8990.
[2] Daniel vii., 19.

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shaving the hair and paring the nails of a female captive before marriage.[1]

The hairs correspond to intellectual expressions of an individual's thoughts and feelings which bring him into relation with others, because the hairs are originally developed as downgrowths of the mucous stratum of the epidermis, which corresponds to the love of coming in contact with others in a thoughtful way. The hair of the head corresponds to intellectual expressions of one's inner thoughts and feelings, and the hair on the face and the rest of the body corresponds to intellectual expressions of one's outer thoughts and feelings.

The eyebrows correspond to intellectual expressions in regard to the objects of sight. They differ in meaning from the eyelashes, in that the eyelashes are expressions in regard to the outward nature of objects, telling who or what they are, while the eyebrows are merely expressions as to the appearance of objects.

The whiskers at the sides of the cheeks correspond to expressions of intellectual good-will, and the beard about the chin corresponds to expressions of emotional good-will, because the cheeks and the muscles of the chin correspond to good-will.[2] The mustache on the upper lip corresponds to expressions of intellectual recep-

[1] Deuteronomy xxi., 12; *Heavenly Arcana*, 3703.
[2] See above, p. 154.

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tivity, and the goatee on the lower lip corresponds to expressions of emotional receptivity, because the lips correspond to the faculty of receptivity.[1]

As women are wont to express their good-will, their receptivity, and many other of their mental attitudes more emotionally than men, therefore women usually have no beards or mustaches, and their bodies are less hairy than men's; but, on the other hand, women greatly excel men in the length and beauty of the hair on their heads, for women are more given than men to fine, flowing expressions of their inner mentality. This difference in the distribution of the hair of the two sexes may be due in part to the fact that interiorly woman is intellectual and exteriorly emotional, while man is interiorly emotional and exteriorly intellectual[2]; for the head represents the interior part of the mind, and the body the exterior part. Women, however, do not give free expression to their feelings when conversing about matters of sexual love; but, like men, they make use of the more modest intellectual expressions in talking on these subjects, for both men and women have hair about the genital organs.

Poets and musicians often wear long hair, because their art resides largely in the fine expression of inner moods.

Wigs made of false hair correspond to artificial modes of expression. The wigs which are the

[1] See above, p. 163. [2] *Idem*, pp. 255, 259, 260.

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professional dress of judges and barristers in Great Britain represent their artificial style of speech, which is couched largely in a conventional legal phraseology, and not in their own natural language.

They whose life consists chiefly in giving intellectual expression to their feelings and opinions cannot have a great deal of interiority, and consequently spirits who have but little spiritual life and intelligence are described by Swedenborg as seeming abnormally hairy.[1] As hair signifies intellectual expressions, therefore they who are in mere truth or in falsity appear hairy in the other world; and as baldness, which is the absence of hair on the head, signifies mere emotional expression of internal states of mind, which is apt to lack intelligent thought and to degenerate into stupidity, therefore they who are in mere feeling or in evil and devoid of intelligence appear bald.[2]

As the hairs represent the intelligent intellectual expressions by which the currents of an individual's life are brought into relationship with others outside of him, and as these expressions are the ultimate things of his life, therefore we are told that the ultimate or literal sense of the Word corresponds to the hair[3]; for the literal

[1] *Heavenly Arcana*, 3301, 5552, 5571.

[2] *True Christian Religion*, 74; *Spiritual Diary*, 5812; *Apocalypse Explained*, 724.

[3] *Apocalypse Revealed*, 47; *Apocalypse Explained*, 918; *De Verbo*, 10.

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sense of the Bible contains such outward expressions of the Lord's thoughts and feelings as bring Him into living relationship with all conditions of humanity, even the lowest.

In consequence of this signification of the hair as applied to the Word, we are informed that spirits who love the literal truths of the Bible appear becomingly adorned with hair, whereas spirits who have no such love for the ultimate things of the Word appear bald.[1]

The sebaceous glands, which are usually attached to the hairs, correspond to a pleasant and suave regard to the thoughts and feelings of others, because the function of the sebaceous glands in lubricating the hairs with oily secretions is exactly similar to the smoothness and pleasantness imparted to our remarks, when, although expressing our own views firmly, we nevertheless pay due regard to the feelings and opinions of those with whom we are conversing.

The sweat glands correspond to the faculty of keeping cool and not getting wrought up and excited in our communications and discussions with others, because it is the function of these glands to cool the body whenever it becomes overheated.

In the Greatest Man of our earth, the skin is represented by the Hawaiian Islands.

[1] *Apocalypse Explained*, 555; *Heavenly Arcana*, 5569; *Doctrine of the Sacred Scriptures*, 35.

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In the Greatest Man of heaven, the angels of the skin and hair constitute the ultimate societies of heaven, which encompass, unite, and protect the more internal societies. It is through these angels that the influx from the Heavenly Man as a whole flows into men on earth, and they must therefore be largely instrumental in bringing the life of heaven into close relationship with the life of the Church in the world.

The angels of the skin have an exquisite perception of the inner quality of others as revealed by the manner in which their presence affects them; and while they gladly welcome the spheres of all good and upright spirits, because they are in accord with the life of heaven, they promptly shut out all evil and false spheres, and prevent them from penetrating into the interior societies. Not only do these angels admit or exclude the spheres of spirits, but they are also charged with the acceptance or rejection of the spirits themselves; for Swedenborg states that "the societies to which the cuticles correspond are in the entrance to heaven, and there is given to them perception of the quality of the spirits who approach the first threshold, whom they either reject or admit, so that they may be called entrances or doorways to heaven." [1] The "cuticles" here seem to include the mucous membranes lining the whole alimentary tract, for spirits are taken up

[1] *Heavenly Arcana*, 5553.

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into heaven from the provinces of the mouth, the stomach, and the intestines. Moreover, the orifices of the minute ducts of the skin, which absorb ethereal aliment for the body, are like invisible portals, through which the angels of the skin quickly take up the souls of infants and fœtuses when they die.[1]

The angels of the skin and hair give outward expression to the inward life of the entire heavens. With those who constitute the skin this expression of the indwelling heavenly states is emotional in its character, but with those who constitute the hair the expression becomes intellectual.

As the angels forming the two outward layers of the epidermis are wont to express their knowledge in a purely emotional way, and as such a habit may lead in some cases to mere prattling without intelligence, therefore it is probably to these angels that Swedenborg refers in the following passage:

"There are spirits through whom others speak, and who scarcely understand what they say: this they have confessed, but still they talk a great deal. They become such who in the life of the body have been mere prattlers, not thinking at all of what they said, and who have loved to talk on all subjects. I have been told that they are in companies, and that some

[1] *Spiritual Diary*, 1022, 1035, and under "Infant," in the Index.

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of their companies have reference to the membranes which cover the viscera of the body, and some to the layers of the skin which are but slightly sensitive; for they are only passive forces, and do nothing from themselves, but from others." [1]

The angels of the nails perform an important use by verifying the statements made by others; for in this way they are able to give certitude to the knowledge of the heavenly societies, and to eliminate many errors arising from carelessness and inaccuracy. The inherent characteristic of the angels of the nails, who love to ascertain for themselves whether or not a thing is as represented, is treated of in the following lines, where they seem to be grouped with the societies composing the horny or scaly layer of the skin:

"It has been granted me to know those who constitute the scaly skin, which is less sensitive than any other of the coverings; for it is covered over with scales which are almost like delicate cartilage. The societies which constitute it are they who reason concerning all things whether it is so or not so, nor do they go any farther. When I talked with them, it was given to perceive that they did not at all comprehend what is true or not true, and they who have reasoned most comprehend the least. Still, they seem to themselves wiser than others, for they place wisdom in the faculty of arguing. They are utterly ignorant that the essential thing in wisdom is to

[1] *Heavenly Arcana*, 5557.

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perceive without arguing that it is so or is not so. Many such are from those who, in the world were made so by a confusion of good and truth through philosophicals, who have hence the less common sense." [1]

The angels of the hairs are more or less decided in their statements of individual views, and when these views are quite different from those held by others, such firm expression may give offence and wound the feelings of others; but this undesirable effect is remedied by the presence and influence of the angels of the sebaceous glands, who by their pleasant and considerate regard for the opinions and feelings of others temper and soften the strong assertiveness of the angels of the hairs. The angels of the sebaceous glands seem to be meant in the following description of the spirits who constitute the glands of the skin; for being quick to perceive any dissent or resistance in others to the views which are being expressed, these angels would naturally be disposed to ascertain the truth of a thing by observing whether there is any inward resistance to its utterance:

"There are spirits who, when they wish to know anything, say that it is so, doing this one after-another in society, and thus, when they say it, they observe whether it flows freely, without any spiritual resistance; for when it is not so, they generally perceive

[1] *Heavenly Arcana*, 5556.

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a resistance from within; if they do not perceive resistance, they think that it is so, and do not know it in any other way. Such are they who constitute the glands of the skin; but of these there are two kinds, one which declares a thing because, as was said, it seems to flow freely, from which they conjecture that, as there is no resistance, the thing is in agreement with the heavenly form, consequently with the truth, and that hereby it is affirmed; and the other which boldly declares that a thing is so, although they do not know it." [1]

The peculiarity of the second kind of spirits mentioned here, who boldly declare that a thing is so even when they do not know it, seems characteristic of the action of the little hair muscles, the contractions of which make the hairs erect and cause the sebaceous glands to discharge their contents.

The angels of the sweat glands, who correspond to the faculty of not becoming wrought up in our communications with others, exert a calming influence over the whole heaven; for by their quiet admonitions they restrain undue excitement in the discussions of others, and allay the intensity of overwrought passions.

The chapter on the skin concludes the study of the correspondences of the human body undertaken in this volume; and it should be remarked that the correspondences which have been pre-

[1] *Heavenly Arcana*, 5558.

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sented in these pages are mainly particular and structural correspondences. A number of the parts of the body, such as the hands and feet, have also general and functional correspondences, which are somewhat different; but as most of these general correspondences are amply set forth in Swedenborg's writings, they have not been treated of in the present book.

The correspondences assigned to the several countries of the globe explain many of the physical peculiarities of the different nations; for example, the muscularity of the Spaniards is explained by the fact that many muscles of the thigh and back correspond to the faculty which Spain represents, and the large lips and jaws characteristic of the people of Senegambia and Guinea are easily accounted for when it is considered that these geographical areas correspond to the lips and jaws. A better understanding of some of the mental traits of the various nations may also be arrived at through a knowledge of their physiological correspondences; for instance, the French are noted for their splenetic temper, because France corresponds to the spleen, and the inhabitants of German East Africa and Egypt are distinguished by their fondness for feasts and banquets, because these countries correspond to the œsophagus and the stomach. But no evidence has been brought forward to prove these geographical correspondences, because

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this subject has been fully discussed in the book, *Psychology of the Nations*, where it was shown that the different countries of the earth correspond primarily to the convolutions of the brain; and if the countries correspond to the faculties in the brain, they correspond also to the parts of the body, for the latter are merely outward expressions and manifestations of the former.

The fact that the several organs and parts of the body correspond to the various faculties of the mind suggests a rational system of mind cure; for from such a doctrine it becomes evident that many of the diseases afflicting humanity are nothing but perversions of the mental faculties, which ultimate themselves in the body.[1] It is true that many illnesses, such as those which arise from injury, exposure, and similar conditions, are due to purely natural causes and cannot be cured by the mind, nor is it likely that a disease representing a single perverse action of the mind can be cured by mental discipline alone, for the disease must go through all the stages representative of the state of the mental perversion causing it; but all chronic diseases and all diseases that owe their existence to a continued state of mental disorder can certainly be cured by the removal from the mind of the perverse

[1] That the diseases of the body correspond to perversions of the mind, see *Heavenly Arcana*, 5712, 5726, 6502, 8364; Deuteronomy xxviii., 15, 22, 27, 35, 60, 61.

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mental conditions whereof the diseases are the effigies. The following examples may be given as illustrations. The disease of goitre, which is an enlargement of the thyroid body, corresponds to a greatly exaggerated idea of one's own importance in the world, and it can be cured by reducing to normal limits such an inflated idea of self-importance; and the disease of myxœdema, which interferes with the proper functions of the thyroid body, and which is relieved by thyroid feeding or the administration of thyroid extracts, seems to correspond to exactly the opposite mental state of believing one's self of no importance whatever, and this disease can be cured by compelling one's self to think that as a member and part of the whole he is of at least some consequence in the world. But for the successful practice of such a system of mind cure a full and accurate knowledge of the correspondences of diseases is requisite, and unfortunately scarcely anything is known in this direction.

The present volume for the first time places the correspondences of the human body on an exact basis, but it does little more than open the subject. There are a large number of faculties, such as imagination, fancy, veneration, conscience, love to God, love to the neighbor, humor, and many others, which still remain unlocated; and yet it is probable that every faculty contained in the brain has its physical counterpart in some

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tissue of the body. A careful examination of every detail of the human anatomy will doubtless reveal these missing correspondences, and at the same time will shed great light on the physiology of the body as well as the psychology of the mind; but the consideration of the anatomical, histological, and physiological correspondences of the human body on so stupendous a scale is left to future correspondentialists.

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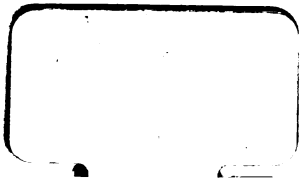

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